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Contribution of shipping in a nation's economy and the role of maritime training in this contribution

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CONTRIBUTION OF SHIPPING IN A NATION'S ECONOMY AND ROLE OF MARITIME TRAINING IN THIS CONTRIBUTION

By

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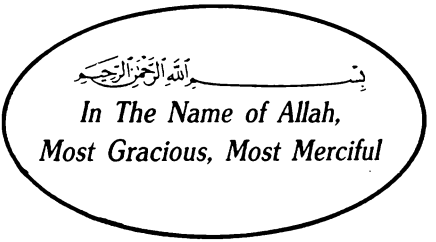
بِسْمِ اللَّهِ الرَّحْمَٰنِ الرَّحِيمِ
In The Name of Allah,
Most Gracious, Most Merciful

DECLARATION

I certify that all the material in this dissertation that is not my own work has been identified, and no material is included for which a degree has previously been conferred on me.

The contents of this dissertation reflect my own personal views, and are not necessarily endorsed by the University.

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ABSTRACT

Shipping makes a tremendous contribution to the nation's development and is an essential factor of international trade. Trade, in turn, has in recent years become the most important contributor to the economic development. Shipping and the economic development are increasingly linked. The development of the shipping industry is therefore of great importance to all nations.

Technological changes in ports and shipping are being advanced. The stress is being given on safer shipping and cleaner oceans. The world is looking for well trained and qualified marine personnel, aware of the technological advancement, for safe navigation of highly sophisticated ships. Thus maritime training and education has become very important and plays a significant role in making the seafarers efficient and competent to handle the modern ships.

This paper discusses the contribution of the shipping industry, particularly Pakistani shipping , to the nation's economy, the human element in shipping and the role of international and national organizations, governments and the management in this regard. It also evaluates the economical role of seafarers to the nation's economy and explains the maritime education and training system in Pakistan.

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1.	A.D	After the Death of Christ
2.	ASEAN	Association of South East Asian Countries
3.	B.C.	Before Christ
4.	BFI	Baltic Freight Index
5.	C.I.F.	Cost Insurance Freight
6.	CKD	Knocked Down Cases
7..	DWT.	Dead weight Tons
8.	ECO.	Economic Cooperation Organisation
9.	EEC.	Economic coordination Committee
10	FATA	Federally Administered Tribal Areas
11.	GDP.	Gross Domestic Product
12.	GNP	Gross National Production
13.	GRT	Gross Registered Tonnage
14.	IMO	International Maritime Organisation
15.	ISF	International Shipping Federation
16.	IMF	International Monetary Fund
17.	ISL	Institute of Shipping Economics and Logistics
18.	KPT	Karachi Port Trust
19.	KSEW	Karachi Shipyard and Engineering Workshop
20	MSA	Maritime Safety Committee.
21.	NIS	Norwagian International Shipping Register
22.	NSC	National Shipping Corporation
23.	NTC	National Tanker Corporation
24.	OECD	Organization of Economic Cooperation and Development
25.	OIC	Organization of Islamic Countries
26.	PMA	Pakistan Marine Academy
27.	PN	Pakistan Navy

28. PNSC Pakistan National Shipping Corporation
29. PSC Pakistan Shipping Corporation
30. SAARC South Asian Association for Regional Cooperation
31. STC Seamen's Training Centre
32. UK United Kindom
33. UNCTAD United Nations Conference on Trade and Development
34. US United States
35. USA United States of America
36. VLCC Very Large Crude Carrier
37. WS World Scale

INTRODUCTION

The movement of goods and persons by water dates back to the earliest times. Over the centuries the discovery of new land through seagoing adventures and the continuing exploitation of technological advances by shipping has steadily expanded the role of water transportation in the growth of international trade and the world's economy. The sea transport has become an essential facility for the exploitation and development of economic resources on a national and international scale. It allows goods or material to be moved from areas of low utility to areas of high utility.

Generally speaking, the demand for shipping is derived from the demand for goods. Certain forms of transport such as pleasure cruises and holiday travel may be regarded as " consumer services" but the basic function of shipping involving economic, social and defence needs is creation of utility for the goods. More recently, the introduction of containerisation and specialised bulk carriers in shipping has facilitated the development of world resources in terms of both raw materials and manufactured goods. The exchange of goods has brought countries, with a high level of industrial advancement, such as those in Europe, into contact with nations at a lower level of industrialisation, like countries of the Indian sub-continent and other countries in the east. In doing so, it has helped community life through the development of local industry, producing goods for overseas markets.

The economic role of shipping or sea transport, in general, cannot be ignored. The economic significance of the merchant marine is widely recognised, but it is not easily quantifiable by economic indices. Certainly, there exist a number of economic indicators that show the role of shipping in the national economy. The main potential economic benefits from investment in shipping are the following:

(i). Net foreign exchange savings;

(ii).assistance to the country's foreign trade and general economy through lower freight rates, better or more secure shipping service, and better export returns on essential bulk commodities;

(iii). Linkages with the rest of the economy which leads to greater economic diversification and development;

(iv). Contribution to the balance of payments;

(v). Promotion of the employment opportunities; and

(vi). Net profits from shipping operations.

Shipping therefore allows economic resources to be developed to the full extent. It permits specialisation in economic activity, whether it may be mining, car manufacturing or farming. Without cheap, reliable and well managed shipping services, the exchange of goods and services would be smaller, more costly and detrimental to living standards world wide.

In times of crisis or political unrest the national merchant marine plays an important role in enabling the country to be independent of input of shipping services when these are unavailable, or can be obtained only at a high price or through political concessions. It is not an accident that developed countries, with few exceptions, have become maritime powers. Sea transport has been and still is an important factor of their economic growth.

The newly emerged nations see maritime transport as a prerequisite requirement for their political and economic independence. They are making a considerable financial attempt to establish their own merchant marines and acquire the necessary expertise in maritime operations.

Over the years the maritime industry has undergone an accelerated advancement in maritime technology. The level of today's ship technology is a far cry from what was once a galleon ship widely used by overseas merchants during earlier days of seaborne trade. Basically, as mentioned before, shipping is an economic venture pivoting on profitability and competitiveness in worldwide shipping markets. Due to a harsh shipping business climate, ship owners and operators rely heavily on technology to cope with the prevailing predicament in shipping business. This trend of reliance on technology served as the principal catalyst in the growth of maritime technology, to the level we have today.

It cannot be denied that efficiency, the main advantage offered by technology, must be complemented with safety for obvious reasons. Practically, without safety, efficient production would always be susceptible to frequent interruptions due to accidents or system derangement. Moreover, as Carl, G. Hayos, author of the book, Occupational Safety and Accident Prevention 1988, puts it, " Modern technology has created a greater demand for increased system safety, due to greater capital cost, sophistication, complexity and capacity." Considering these views it can be concluded that the developments in maritime technology are also aimed at the improvement of maritime safety.

However, doubts arise on its dependability in serving this purpose, when despite of these technological developments, the world is still beset with the occurrence of maritime casualties on a seemingly uncontrollable frequency. These casualties create a public outcry and pressure to curb these unwarranted events. These situations have been dramatised by the grounding of very large crude oil tankers like, the Exxon Valdez and Amoco Cadiz, and the tradgedies of passenger ships like Dona Paz, M/S Herald of Free Enterprise and the Scandinavian Star, which claimed thousands of lives, resulted in loss of valuable properties and wrecked wide areas of our marine

environment and its fragile system. These circumstances suggest a strong message that the development in maritime technology alone cannot ensure maritime safety.

Having these arguments in mind, a more logical question that would likely follow is, what ingredient more is needed to satisfy maritime safety requirements? The popular contentions among maritime professionals converge on the human factor as the main cause of maritime accidents. It is a well known fact that more than eighty percent of maritime casualties can be linked to human error. There are no totally safe ships because they are being built, inspected, manned and operated by human beings.

The only way to eliminate or reduce the risk of human error in shipping casualties is to develop the skills of shipping personnel on board ship as well as ashore by providing effective training and education.

More critical than ever before is the fact that the new learning skills are not simply related to operations of new technologies but to the most innovative and profitable application of new technology. In view of the technological changes, the training function has become more important as it is the method by which necessary skills can be provided to the industry to meet the challenge being posed by human error in accommodating these changes.

Training helps to implement a quality approach, promotes discussions and a general attitude to seek quality performance and facilitates employees improving their expertise and providing quality service. It is essential to note that whenever mistakes are made in shipping, the potential costs are threefold. First is the cost of the rectifying the mistakes, then the loss to company image and reputation and finally, there may be a claim for compensation if somebody has suffered injury or damage to property due to the mistake of the seafarers.

By training and education the risk of human error may be reduced if not eliminated, because training is "a planned and a systematic effort to modify or develop knowledge, skills and attitude through learning experience to achieve effective performance in an activity or range of activities." Its purpose in the work situation is to enable an individual to acquire abilities in order to perform adequately a given task or job.

The paper is therefore oriented to evaluate and analyse the role of maritime industry in general and its contribution towards a nation's economy in particular. This is also aimed at the role played by trained human resources in the economical contribution of shipping, and their skill development. The stress is given on the implication of maritime training and education to eliminate or reduce shipping casualties. Because it is the need of the day to harmonize the maritime manpower with technological demands as it is the key factor in the enhancement of maritime safety. This will serve as compelling literature that will pinpoint and expose some facts, and as a consequence, draw necessary attention and awareness among the government authorities and private entities, involved in the industry to better understand certain problems and initiate positive actions to remedy them.

The methodology of research and data resources

A short survey of specialised literature combined with trade and shipping statistics form the basis for a description of the Pakistani and UK portion of the study. Three other conventional methods were also employed namely, Desk Research, On the Job Training Observations And Interviews with maritime economists, Professors of various Training institutions and responsible maritime administrators.

This Dissertation contains six chapters. The first chapter reviews the general role of shipping as an industry and its contribution to economic activities such as,

contribution to the balance of payments, diversification of national and international trade, and promotion of employment opportunities.

Chapter two deals with the UK shipping and its role in the diversification of UK seaborne trade and contribution to the balance of payments.

Chapter three explains the economy of Pakistan in general and the national merchant fleet's contribution towards Pakistan's economy such as, in the balance of payments and in GDP and GNP.

The role of trained human resources in shipping and particularly in the nation's economy is evaluated and analysed in chapter four with special emphasis on the human element in shipping, the role played by various organisations in responding to human error in shipping, like IMO, governments and company management. The demand and supply of maritime manpower at the global level, the competitors in supplying skilled maritime manpower to the international shipping market, and the recruitment policy of the Pakistani government regarding seafarers are also touchedupon.

Chapter five discusses the implication of maritime training and education in Pakistan. Maritime training institutions, maritime training schemes and courses offered have been summarised.

Chapter six concludes the study by suggesting actions for future development of Pakistani shipping industry and finally proposing recommendations regarding maritime training and education and maritime manpower development.

CHAPTER 1

THE ROLE OF MARITIME TRANSPORT

1.1. Transport As a Part of the Production Process.

The production process has had different degrees of specialisation and division of labour in any single historical movement. The specialisation and division of labour have been a cause of and at the same time, an effect on humanity's development. Currently with the specialisation and division of labour, the commodities are moved easily from where they had been produced to the place of utility.

A commodity has a real value if it has utility, otherwise it does not have any value at all. In other words, a commodity has not been finished until it arrives at the place where it will be consumed either directly or be incorporated in a new production process. Obviously, the essential movement of such a commodity has to be made by a specific means, i.e. the means of transportation. So the means of transportation, engaged in the movement of merchandise, is a part of the production process.

1.2 Transport As a Cost Factor in the Production Process

The principal aim of human beings is to totally satisfy their needs. In order to do so human beings have to produce.

Production is a process where both human resources and material resources are spent. The fewer resources consumed per unit produced, the more rational and effective the production process will be. It is therefore of interest to achieve the lowest cost of production. As mentioned before, the transportation of goods is a part of production

process, so as far as transportation is concerned the most important issue, is to obtain the lowest cost of transportation. It should be noted that transportation has to performed with the right quality and at the right time. Paradoxically the problem of particular individuals or particular groups of people, is to obtain maximum profits from the carriage of goods, while however for the human society the problem is how to transport the goods with the lowest possible costs.

1.3 Transport As an Economic Development Factor

Transport is an active factor in the economic development process. By this it is meant that the specialisation and technical improvements of the means of transportation bring together a reduction in the cost of transportation. Consequently the possibilities to link areas, which were not economically linkable before, will be increased. Then the specialisation in these areas may be greater because the possibilities of co-operation will also be greater. Therefore, each particular area will benefit from the economical advantages of such specialisation and division of labour. Each area may concentrate its resources on the production of the particular goods in which it has cost advantages. As a result economical growth may be increased.

1.4 Maritime Transport and Trade

It has been pointed out that specialisation and division of labour in the production process, brings the need to shift the results of such specialisation from the places of production to places for consumption. However, it has not been mentioned through which mechanisms the co-operation among different producers has been achieved. today such mechanisms are the means of transportation or trade.

There is an unbreakable link between trade and transport and that is demand. The demand for transportation arises from the demand for trade. If there is no trade, there

is no demand for transportation. Keeping in view that three fourths of the surface of our planet is covered by water, then it is easy to understand the strong relationship between trade and maritime transport.

It is stated that in international trade, about 60-80% of all goods are carried by ships. (BIMCO Review, 1994). Maritime transport is then a decisive factor in international trade. Today, the technological and scientific achievements of mankind have made it possible to build sophisticated ships and scientific, technical and information revolution plays an active role in the process of making the characteristics of the vessels more and more responsive to the needs of the trade. The more suitable the ships are to the trade's needs, the more beneficial the international trade will be. The subordination of the demand of transportation to the trade makes maritime transport especially sensitive to any fluctuation in international economic activities. Therefore, the economic, political, social and physical events which have a direct effect on trade will also produce an effect on the demand for maritime transport.

1.5 Brief Description of Historical Movement of Goods by Sea

The history of maritime transport is strongly connected to the history of trade. The nations which have controlled the trade and resources of the world have been in the most suitable position to enjoy the economic benefits of maritime transport. It is evident from history that there is a direct interaction between trade and control of economic resources.

In the times when Spain and Portugal had the greatest empires beyond their boundaries, they acquired an enormous amount of wealth. The need to transport resources from their colonies and the availability of the wealth were the causes of their rapid fleet development. They were able to increase their fleet's cargo capacity, despite the fact that even at that time it was a capital intensive investment, since the

necessary capital accumulated from their colonies, and they had a total monopoly on the trade to ensure employment of their vessels. Some time afterwards the same phenomenon occurred in other European countries such as Great Britain and the Netherlands.

The English colonised other regions beyond the seas and established a great empire. They reserved trade with their colonies for themselves by means of protectionist legislation. As a result, British naval power was increased, maintaining a very relevant position for many years.

Closer to the present time, the industrial revolution took place. New trading relations among nations were essential for the development of the industries. Those countries whose industries were developing rapidly had the most suitable conditions to reap the benefits of maritime transport. They had economic resources from the new trade-relations to invest in shipping, as well as the technical advantages of developing industry. In addition these nations became indispensable to other countries in the provisions of finished goods.

On the other hand, there were a large number of countries with inadequate economies, generally mono-producers, with a scarcity of financial resources, with very poor or no industrial development at all, with populations unfamiliar with technical culture and with no infrastructure. Many of these countries were colonies; others, which have achieved their independence, remained dependent on their former colonisers, through economic relations which differed little from those existing before.

As a result, these countries kept their positions and conditions as raw material suppliers and great markets for finished goods. Obviously, since they could not invest in shipping, they could not create a maritime tradition, they could not enjoy any advantages of the transport of their trade. Thus new commercial relations and an

impressive advent of the technical improvements took place only in those countries where the capital had accumulated from years back. Their economies skyrocketed. The trade among them saw a tremendous expansion. The rapid technological evolution and the increasing needs for their products had their effects on the maritime sphere.

Rapid technical evolution in the maritime sphere frequently creates excess capacity. A high wage country like Great Britain could only operate with the most modern tonnage and continuously build new ships. As a result, a cheap market of sound second hand vessels came into existence. Different constraints, as for example wars, provoked a boom in freight rates.

From the above mentioned situations, Scandinavian countries especially Norway, showed a good ability to buy and sell second hand vessels at the right moment, and in this way were able to build up a strong fleet. They became new maritime nations of that time. However, Scandinavian countries became special maritime nations because of the fact that most of the cargo they transported did not belong to their own trade, but to the trade of a third country. In other words they became cross traders.

Finally the 20th century came with a world fleet share structure which was not well spread out. Indeed, there were only a few countries which had almost all of the sea going vessels of the world, and consequently they were the main carriers of international trade. The century witnessed different political, economic and social constraints, i.e. the two world wars, the advent of socialism in the world, economic crisis and depression periods, capital internationalisation especially in shipping, an increasing gap between developed and developing countries, independence of the remaining colonised countries, social revolutions, the awareness of the third world of their unbearable economic and social problems together with nationalistic attitudes of

Many more countries began to invest in shipping and the former and relatively limited ownership of the world fleet by a few countries started to disappear. Certainly, the ownership of the world fleet is still concentrated in developed market economy countries accounting for 57.7% own and the largest part of the 40.2% of open register tonnage. (see Annex 1). However, it is noticeable that developing countries, who held an insignificant share in the early 1900s, had increased their share to 16.5% by 1985 and 38.3% by 1994.(ISL,1993-94, pp.11&21)

1.6 Motivational Aspects of Owing National Fleet

Normally, countries have not found only one single motivation to invest in shipping. Many motivations have impressed countries, particularly developing countries, to invest and develop their own national fleets. However, to make this explanation easier and more concise, the main motivations are briefly analysed hereunder.

1.6.1 New Source of Foreign Exchange to the Balance of Payments

As regards the economic motivations to establish a merchant marine, all of them aim at bringing a positive impact to the balance of payments in the respective countries, either directly or indirectly. So, it is relevant to evaluate if the establishment of a national merchant marine will have a positive impact on the balance of payments of a particular country.

The evaluation of the aforesaid impact has no unique method of calculation, since in each particular country, the benefits may arise from different sources as a consequence of specific endowed conditions of the country concerned, such as foreign exchange earning and imports savings.

In general terms, it has been pointed out that the value of maritime transportation is approximately 5-6% and 8-9% in developing commodities and 1-3% in manufacturing of the Cost Insurance Freight (C.I.F.) value of the carriage of goods by sea. Taking into consideration the many hundreds of millions of dollars involved in international trade, it is obvious that the nature of the carriage of goods by sea could be profitable as well.

Some countries feel that if they enter in such business they will have an immediate source of foreign exchange income due to the fact that there are always international needs for carriage of cargo by sea.

1.6.2 Saving of Foreign Exchange to the Balance of Payments

Maritime transportation is an inevitable requirement in mostly all the countries in the world. It usually represents a sound part of the trade value as was mentioned earlier. Consequently, the disbursement of foreign exchange in freight terms is relevant to the balance of payments. Many of the countries in the world face scarcity of foreign currencies. They consider that having their own national fleet to carry their trade is a way to avoid significant loss of foreign currencies.

1.6.3 Diversification of Industry

Most of the countries are the producers of either primary goods or finished goods. They need to transport these goods to markets where they can obtain good prices. But the developing countries are mainly raw goods producers and their products generally have low prices in the marketplace. They have an urgent need to multiply their incomes. this cannot be achieved through increases in production of their traditional goods but through industrialisation.

their incomes. this cannot be achieved through increases in production of their traditional goods but through industrialisation.

Some countries find the shipping industry especially suitable to add value to their productions for the following reasons:

1. Contrary to the majority of other industries, the shipping industry requires a very short time for investment, meaning that time, from the moment the decision to invest is taken to the moment when such investment begins to produce, is quite short.
2. Shipping does not necessarily require additional expenditure on infrastructure as for other industries.
3. Ships may be operated immediately, even in cases when the country does not have trained people, since there is an internationally qualified manpower market available.
4. Ships are by themselves a good security to the people who grant loans, so sources of financing are more easily attained with respect to other industries.
5. Ships are more flexible investments than many other industries because, theymay be used in different trades and they may be easily sold at any time.
6. Shipping may become the pivoting point to develop connected industries.

1.6.4 Diversification of Employment

Developing countries depend mainly on a few primary commodities for their export earnings. These commodities are traded in a relatively highly competitive market, consequently any favourable effects in them could lead to widespread benefits, particularly to the economy of these countries.

Due to these benefits the diversification of employment opportunities are therefore essential. Maritime employment presents an attractive opportunity with or without the need to establish a national merchant fleet. Today, there exists an international market of seamen, and countries like the Philippines and South Korea have many of their nationals employed in foreign ships. These seafarers remit greater parts of their

salaries in foreign currencies to their home countries which benefit the balance of payments in their countries. Further, employment on foreign ships provides enough training opportunities for the seamen, which may be of help to any country contemplating the establishment of its own fleet.

1.6.5 Expansion of National Trade

Most of the countries without their national fleet have been deprived of expanding their trade to other potential markets where they would have better commercial conditions for their products because no transport services were offered at relatively cheap costs. Generally, foreign lines do not offer services if there is not enough cargo to assure a minimum level of profit in the shortgo-medium run. Therefore, to establish a national fleet is an answer to trade expansion for some under developed countries.

1.6.6 Regional Integration

It is a fact that some countries are not able economically to bear the costs for the total industrialisation needed to produce semi and fully manufactured goods. However, benefit may be attained through regional integration. The possibilities to avoid duplication of efforts, to achieve economy of scale, and to have complementary production are increased with regional integration.

However, in most cases such integration is poor or completely nil, since adequate maritime services are not available. Consequently, this is another motivation for countries, to invest in shipping.

1.6.7 Strengthen the Position with Respect to Conferences

Inspite of the fact that the conferences bring some advantages to shippers, it is not unknown that they are monopolistic organisations by nature. So the main benefits are achieved by ship owners and moreover, shippers' positions are exposed to a great extent to the ship owners' interests.

The conferences limit competition from both outside and within the conferences though polling. Consequently, the advantages of free and fair competition disappear and undesirable effects on the shippers' interests may arise. Such effects are listed as follows:

(I) Efficiency of service may decrease

(II) Freight rates may be increased excessively.

(III) Promotional trade may not find the appropriate ground to be developed.

(IV) New trade requirements may not find an appropriate answer in conference service.

(V) Loyalty arrangements may destroy the shippers' freedom to chose either the most suitable means of transportation or the most convenient terms.

Some developing countries have found that by establishing their national lines, they have been able to diminish the harmful effects of the conferences' monopoly on the marine transportation services.

1.6. 8 Economic Independence

Economic independence is a necessary requirement to exercise self determination. This phenomenon has been proved especially in times of war and world crisis.

As many countries perform a substantial part of their trade by sea, they are consequently affected when they are deprived of maritime services. In practice, some developing countries have developed their national fleets much faster than would have

otherwise occurred if no blockade or no economic boycott existed. Fleet development is at times a necessity to the indispensable independence to carry the goods of their trade.

In close relation to the above fact, there is a national security motivation to be taken into consideration. History tells us that some countries have been threatened by military intervention because of their non-acceptance of other country's political terms and conditions. In this situation, national fleets have played a vital role in enabling them to carry the necessary ammunition for their defence. In fact it has become the link of supply and a second line of defence during war time for some nations.

Today when the market is so depressed and the fleets of some developed countries are unable to operate on a profitable basis, the governments of these countries have begun to give subsidies to their fleets because of national security implications among other reasons.

CHAPTER 2

SHIPPING INDUSTRY AND ECONOMY OF A COUNTRY

2.1 Impact of National Fleet on National Economy.

Maritime transport, a primary factor in the regulation of world trade flow, has a direct and significant bearing on a country's economic growth. About 80% of world trade is estimated to be transported by sea. In the intercontinental trade, the estimate to be transported is 90 percent. Indeed over 90% of Asian and African trade is estimated to be carried by sea, and the cost of shipping forms an integral part of the prices of the traded goods.

For the nations that emerged from colonial or semi-colonial status since 1945, economic growth is virtually linked with an increasing share in international trade since, in general, a large portion of their GNP is composed of exports. The prices of the major exports of these countries are mainly primary products which have been generally stagnant or declining. On the other hand, prices of manufactured goods, which are the main exports of industrialised countries and major imports of developing countries, have been rising. The impact of these divergent price trends on the economies of the countries have been intensified by an increasing demand for imported capital goods and industrial input for economic infrastructure, and for agriculture and industrial development.

Participation in international shipping, for many developed and developing countries, is an important aspect of development. As most of their trade is over long distances with each other and, involve such goods, the best part of which are not easily transported by any other means.

Confronted with declining export trade and the heavy impact of rising freight rates deterioration in balance of payments results, particularly in developing countries. Through the establishment of their own merchant fleets, these countries could regulate the adverse impact on their balance of payments from the outflow of foreign exchange for payment of shipping services and other invisible transactions.

In most of countries, international trade is closely related to national economic growth. The dynamic theory of international trade suggests that the larger and most competitive markets are the key to efficient economic development based upon the exploitation of modern technology in appropriate relation to national relative factor costs and industrial circumstances.

Maritime transport is an integral component of production with an indispensable bearing on a country's economic progress. The very survival of a nation depends fundamentally on the movements of the goods produced and services exchanged from other nations. This dependence is felt in all the varied activities that characterise a nation's life.

In fact, maritime transport can be linked to the blood veins that carry the needs of the world to each and every corner of the globe, and demonstrates the need for maritime nations to establish or develop their merchant marines, consistent with efficient service, to facilitate their access to foreign markets and to enhance their success in the economic development of their countries. In this respect the importance of a merchant marine is illustrated by the fact that it is a direct contributor to the nation's economy through earnings on international operations such as, freight on imports, exports and cross trade, charter receipts, passenger revenues, contribution to the balance of payments, diversification of employment, promotion of national trade and contribution to Gross National Product (GNP).

The author has chosen two countries, the United Kingdom, a developed maritime nation, and Pakistan, a developing and infant maritime nation, to evaluate the contribution of their national merchant fleets to their nation's economy. In this chapter the contribution of the UK merchant marine to UK's economy is evaluated and in the next chapter the economic contribution of the Pakistani shipping fleet to Pakistan's economy is analysed.

2.2 UK Owned Merchant Fleet

The UK owned merchant fleet has been declining since 1985, when the UK owned trading fleet stood at 1028 ships. On 31 December, 1990 it was 785 and on 31 December, 1993 it has decreased to 666 ships. In the year 1994 it showed some improvement and there was an increase of 12 ships which brought the UK world fleet up to 678 ships with 8.95 million GRT and 13.05 million DWT. In this way there was decline of 106 ships in 1986, 243 by 1990, 362 by 1993 and 350 by the year 1994 compared to the total fleet of 1028 on December, 1985 and the trend of decrease in GRT and DWT seems continuous at the same point in 1986, 1990, 1993 and 1994. The decrease in DWT is witnessed by 2.27, 4.80,6.95 and 7.09 millions respectively. The distribution of UK owned fleet (100 grt and above) is categorised by type, GRT and DWT in table 1.

2.2.1 UK Owned Bulk Carrier Fleet

The UK owned bulk carriers fell from 43 vessels to 41 during the fourth quarter of 1994 and from 61 to 41 during the period June, 1993 to December, 1994, but in tonnage terms the fleet increased by 15000 GRT to 1.39 million GRT and by 46000 DWT to 2.50 million DWT in the same period. In December, 1993, there were 51 ships of 1.33 million GRT and 2.37 million DWT indicating that after sharp declines in

the number and tonnage of bulk carrier vessels of over 15% in the last two years, some stability in the size of the dry bulk carrier fleet may have occurred.

2.2.2 UK Owned Dry Cargo Fleet

A similar picture is emerging with respect to the category of other dry cargo. Two and half years ago on 31 December, 1992 the total number of vessels stood at 447 and a tonnage of 2.70 million GRT and 2.58 million DWT. At 31 December, 1994 there were 432 vessels but the tonnage had risen to 3.01 million GRT and 2.72 million DWT.

2.2.3 UK Owned Oil Tanker Fleet

The oil tanker fleet increased by 13 vessels to 132 during December 1993 to December, 1994 and by 8 vessels to 132 during the period of December, 1992 to December, 1994. During the fourth quarter of 1994, the oil tanker fleet fell from 133 vessels to 132 but the fall in tonnage was of 111,000 GRT and 224,000 DWT to 3.67 million GRT and 7.18 million DWT. Twelve months ago the figures were 3.92 million GRT and 7.63 million DWT, and two and half years ago at 31/12/1992 it was 4.00 million GRT and 7.74 million DWT. This shows that UK tanker fleet has been declining in tonnage terms since 1992. This trend is also witnessed in other type of vessels and tonnage during the same period

2.2.4 UK Owned Passenger Fleet

The passenger fleet showed continuous growth since 1993 and 1994. There was an increase of one passenger ship in the year 1993 from 27 to 28 and 6.5 million GRT to 6.7 million DWT, and in 1994 from 28 to 29 vessels with 3.57 million GRT to 4.04

TABLE 1. UK OWNED MERCHANT FLEET (100 grt and above) 31/12/1994

No.	Vessel Type	1994			1993			1992		
		No.	grt	dwt	No.	grt	dwt	No.	grt	dwt
1.	Bulk carrier	41	1393	2502	51	1338	2367	61	1619	2878
2.	Reefer	11	85	86	13	91	98	18	119	134
3.	Specialised carrier	24	146	89	25	127	115	25	121	114
4.	Container (FC)	48	1467	1470	44	1368	1362	45	1349	1332
5.	Ro-Ro Passenger	96	583	154	98	498	148	101	508	156
6.	Ro-Ro other cargo/container	18	148	85	27	136	123	24	113	104
7.	General cargo/ Passenger	8	10	4	9	11	4	9	11	4
8.	General cargo single deck	175	236	360	161	188	304	174	173	281
9.	General cargo multi deck/cont	52	337	477	43	251	383	51	305	455
10.	Cruise ships	13	400	72	13	354	66	12	355	65
11.	Other passenger	16	4	1	15	3	1	15	3	0
12.	Oil Tanker	132	3673	7179	119	3920	7630	124	4002	7742
13.	Oil Chemical Tanker	5	27	45	9	45	75	9	45	75
14.	Chemical Tanker	7	16	26	8	16	27	10	13	21
15.	Other Tanker	4	2	3	5	2	3	5	2	3
16.	Liquid Gas Carrier	28	421	497	26	420	487	25	415	476
	Total Trading Fleet.	678	8948	13050	666	8768	13193	708	9153	13840

Source:- The British Chamber of Shipping Statistical Brief 1994.

million GRT and 6.7 to 7.3 million DWT. At 31 December, 1994 the total passenger fleet stood at 29 vessels.

2.2.5 Average Age of UK. Owned Fleet

The average age of UK owned fleet rose from 15.5 to 16.2 years by DWT, compared to world average of 14.3. UK owned remains about 2 years older on a DWT basis than the world average for trading vessels. However, this average differential seems mostly, if not totally, due to the high age of the UK owned total liquid fleet which, on a DWT basis, is 3.9 years older than that of the world liquid fleet. In the other three major categories dry bulk, other dry cargo and passenger vessels the UK fleet on a tonnage basis is younger. But with a UK owned total liquid fleet tonnage of 7.75 million DWT or just over 59% of the total of the UK owned fleet of 13.05 million DWT, the age of the whole of the UK owned fleet is accordingly pulled upwards. The average ages of dry bulk, other dry cargo, passenger and liquid carriers in the year 1992 were 12.2, 16.5, 16.9 and 16.9 years respectively. In 1993, the average ages were 12.7, 16.8, 18.3, 17.3 and in 1994 these were pulled up at 13.2, 18.2, 19.7, and 19.8 respectively. The average age of trading fleet was 16.3, 16.6 and 18.4 years in 1992, 1993 and 1994 respectively. (See table no 2.)

TABLE 2. UK OWNED TRADING FLEET. (100grt and above)

AVERAGE AGE

TYPE OF VESSEL	1994	1993	1992
DRY BULK	13.2	12.7	12.2
OTHER DRY CARGO	18.2	16.8	16.5
PASSENGER	19.7	18.3	16.9
LIQUID CARRIER	19.8	17.3	16.9
TRADING FLEET	18.4	16.6	16.3

Source:- The British Chamber of Shipping Statistical Brief 1994.

2.2.6. UK REGISTERED TRADING FLEET

The size of UK registered trading fleet has been declining since 1985. In December 1985, the total number of the UK registered trading fleet was 1028 ships and it fell by 245 to 783 in 1990, 75 to 708 in 1992, 42 to 666 in 1993 and was increased by 12 to 678 in 1994.(See Table 3). The DWT is also declining continuously from 20.14 million DWT to 15.33 million DWT in 1990, 13.84 million in 1992, 13.19 million in 1993 and 13.04 million DWT in 1994.

2.2.7. WORLD FLEET

The size of world fleet continues to grow and it stood at 42,109 trading vessels at 31 December, 1994. This represent an increase of 1,167 vessels since 31 December, 1993, and 2329 vessels since 31 December, 1992. There have also been increase in tonnage levels from 431.3 million GRT and 704.5 million DWT by 31 December, 1994. The number of dry cargo trading ships increased in the year 1994 from 24,202 to 24,435 vessels with an accompanying increase in tonnage from 144.85 million DWT to 145. 36 million DWT.

2.2.8. WORLD FLEET LAID UP

The world fleet laid up on 31 December, 1994, whether expressed in numbers of vessels or tonnage, fell by only one vessel in 1994 compared to 1992. At 31 December, 1992 the UK owned world fleet laid up was 439 vessels with 60.97 million GRT and 104.73 million DWT which declined in 1993 and 1994 to 339 and 356 vessels respectively. The decrease in tonnage stood at 80.36 and 64.20 million DWT respectively. (See Table 4)

TABLE 3. UK OWNED TRADING FLEET (100 grt and above) BY REGISTRATION

DATE	U K		CROWN Dependencies		BRITISH Dependent Territories		REST OF WORLD		ALL REGIST_ ERED	
	NO	000dwt	NO	000dwt	No	000dwt	NO	000dwt	NO	000dwt
31/12/85	789	15423	42	137	87	2749	110	1800	1028	20145
31/12/86	652	9402	47	668	106	5894	117	1908	922	17872
31/12/87	598	6110	87	3457	108	6321	115	1812	908	17700
31/12/88	546	5450	93	3209	102	5992	116	1943	857	16593
31/12/89	524	5016	75	2701	89	5583	117	2004	805	15304
31/12/90	418	3990	71	2774	86	4981	147	3592	785	15338
31/12/91	474	3628	68	2245	81	4048	162	4566	785	14487
31/12/92	395	3479	53	2105	71	3512	189	4744	708	13840
31/12/93	369	3333	48	1796	68	3831	181	4233	666	13193
31/12/94	387	3495	49	2544	58	3609	184	3404	678	13049

Source:- British Shipping Statistical Brief 4th Quarter 1994.

2.3 SEABORNE TRADE.

2.3.1. Development in Recent years

According to the statistical brief of the British Chamber of Shipping, World trade stood up quite well in 1993 and the volume of merchandise trade increased by 3% after the growth of 5% per annum in both 1991 and 1992. This was mainly due to the fact that the past recession primarily occurred within the OECD industrial countries,

output and trade growth holding up elsewhere. This was particularly so in China and the emerging markets of Asia.

TABLE 4. UK OWNED WORLD FLEET LAID UP

TOTAL TRADING FLEET	UK OWNED			WORLD		
DATE	NO.	000GRT	000DWT	NO.	000GRT	000DWT
31 / 12 / 1991	19	44	45	319	2997	4597
31 / 12 / 1992	11	11	10	439	6097	10473
31 / 12 / 1993	12	15	16	393	4868	8036
31 / 12 / 1994	10	10	10	356	4132	6420

Source:- The British Chamber of Shipping Statistical Brief for the period 1991 to 1994.

It is evident from IMF and OECD sources, that world merchandise trade picked up sharply in 1994 to almost 9%. This rate of growth is well above the average of 4.5% recorded during the 1980s and 5.5% during the 1970s. International seaborne trade measured by tonne-miles grew at a much slower rate of 2.8%. However, compound growth rates for the last decade or so for both measures of international trade have been more or less constant at near 4.5% . Also while the developed countries continue the process of de-industrialisation, the developing countries will in turn be industrialising. This would have the effect of keeping high the demand world wide for raw materials and hence world seaborne trade in tonne-miles.(British Chamber of Shipping Statistical Brief, 1994, p. 19).

2.3.2. Structural Trade Trends and Forecasts

The British Chamber of Shipping and UNCTAD Forecast that Intra-OECD trade, which accounts for 60% of total world trade, will decelerate a little over the next two years as the expected domestic demand slow down in the US economy will not be offset by rises in demand elsewhere. However, other components of world trade are likely to remain strong. Imports and exports between OECD and non-OECD areas are projected to rise by 10% per annum during 1995 and 1996. Trade between non-OECD countries, which has been increasing in importance for a number of years, is also set to rise rapidly. South East Asia will probably remain the world's most dynamic region, with both volumes of imports and exports growing in the range of 11-12% per annum.

However the latest IF Direction of Trade Statistics do help to put the " Asian factor " in perspective. In 1993 about 67% of world merchandise trade was to and from the industrialised countries while 17% was with the Asian developing countries. Similar figures for 1987 were 72% and 11%. As regards the UK, in 1993, 77% of merchandise imports were from the industrial countries and 10% were from Asia. In 1987 the same figures were 84% and 7% respectively.

In the USA, imports volumes, which has risen in excess of 10% in 1993 and 1994, are projected to slow significantly in 1995 and 1996 as the growth in domestic US demand slows down. At the same time, export volumes should increase at double digit rates. In Japan, imports volumes are projected to continue to rise substantially more rapidly than export volumes in both 1995 and 1996. However, terms of trade effects mean that the current account surplus, which reached 4 billion US dollars in 1994, is not likely to change much in 1995-96.(British Chamber of Shipping Statistical Brief, 1994, p. 19

2.3.3. UK Seaborne Trade

As for the UK in 1993 merchandise exports and imports volume levels remained unchanged. However, in 1994 both exports and imports responded to the large real depreciation in the exchange rate sustained since September 1992. Reflecting the recovery of demand in world markets, the latest UK figures show that, excluding oil and erratics, merchandise export volumes grew by 11% whereas import growth was relatively subdued at 6.5%. Indication are that both are likely to grow in the range7-8% per annum during 1995 and 1996.(The British Chamber of shipping Statistical Brief, 1994, p 19)

TABLE 5. WORLD FLEET AND WORLD SEABORNE TRADE

FLEET (Mn DWT)					SEABORNE TRADE (Mn metric tonnes)			
Year	Dry Cargo		Tanker	Total	Dry Cargo		Tanker	Total
1980=100					1980=100			
1980	326	352	677	100	2010	1596	3606	100
1986	367	264	631	93	2122	1263	3385	94
1987	362	262	624	92	2178	1283	3461	96
1988	358	261	620	92	2308	1367	3675	102
1989	360	262	621	92	2400	1460	3860	107
1990	367	270	637	94	2451	1526	3977	110
1991	383	285	668	99	2537	1573	4110	114
1993	391	304	692	102	2615	1714	4339	120
1994	399	304	704	104	2720	1755	4475	124

Source:- ISL Bremen, 1993 and The British Chamber of Shipping, 1994.

The table 5 and table 6 show that there is growth of world seaborne trade as well as the growth in UK seaborne trade. Figures for world seaborne trade are available up to 1994 and for UK seaborne trade up to 1992.

TABLE 6. UK SEABORNE TRADE (MILLION TONNES)

IMPORTS

Year	Dry Cargo	UK %	Tanker	UK %	TOTAL	UK %
1982	75.5	32	45.5	24	120.7	29
1988	111.3	24	48.7	15	160.0	21
1989	116.1	25	52.1	11	168.2	21
1990	112.3	23	61.9	9	174.2	18
1991	112.4	22	60.8	8	173.2	17
1992	117.3	22	59.1	12	176.4	18

EXPORTS

Year	Dry Cargo	UK %	Tanker	UK %	TOTAL	UK %
1982	47.2	33	74.3	24	121.5	27
1988	46.6	22	82.5	18	129.1	20
1989	50.1	23	69.0	21	119.1	22
1990	51.6	23	74.6	18	126.2	20
1991	54.1	23	74.0	16	128.1	19
1992	56.9	26	77.3	14	134.2	19

Source:- The British Chamber of Shipping Statistical Brief 1994.

TABLE 6.1 UK SEABORNE TRADE (BILLION TONNE KILOMETRES)

IMPORTS

YEAR	DRY BULK	OTHER DRY CARGO	TANKER	TOTAL
1982	207.4	127.4	333.9	668.7
1988	326.7	173.3	216.8	716. 8
1989	339.0	175.5	260.5	775.0
1990	311.1	179.8	317.9	808.8
1991	338.4	172.8	323.5	834.7
1992	373.8	195.3	329.6	898.7

EXPORTS

YEAR	DRY BULK	OTHER DRY CARGO	TANKER	TOTAL
1982	42.5	98.5	173.8	314.8
1988	49.0	115.6	186.5	351.1
1989	60.0	112.0	157. 9	329.9
1990	60.4	113.3	170.6	344.3
1991	60.1	120.2	151.5	331.8
1992	50.9	122.2	167.9	341.0

Source:- The British Chamber of Shipping Statistical Brief 1994.

2.4 DIRECT CONTRIBUTION TO THE UK ECONOMY

2.4.1 WORLD FREIGHT MARKET

According to the British Chamber of Shipping, VLCC single voyage tanker freight rates for Arabian Gulf- West Worldscale (WS), as found in table 7, started to move upwards last summer. The average for the first half of 1994 was only ws 34 while that for the second half was ws 44. VLCC freight rates, now measured on the January, 1995 world scale basis, for the Arabian Gulf- UK continent single voyage tanker rate have so for been in the range ws 45-50. To put this in perspective, rates for both 1990 and 1991 averaged ws 59 and the 1989 average was ws 47. The general view of ship brokers at the moment is that the conditions in the tanker market have at best only improved marginally. Indeed given the recent turmoil on the foreign exchange markets and sharp fall in the dollar, it seems reasonable to argue that the year 1994's small improvement in foreign earnings has been more or less wiped out by the fall in the dollar's value. Most owners are affected by these exchange rate movements as, unless all their costs are in dollars, any dollar weakness will mean that they will have less Sterling or Deutschmarks available to pay such costs. For better or worse the dollar remains an accepted global currency for the payment of freight rates.

However despite the rather poor position for owners of big tankers, it is widely believed that the supply/demand situation will eventually improve enough to bring higher financial rewards. This view is based on the assumption of the levels of scrapping that occurred last year continuing, and coupled with the increased demand for oil world wide continuing well into the late 1990's. Two years ago there was an access of new VLCC deliveries and a surplus of elderly tonnage in the market. But the subsequent collapse of freight rates the owners of old tonnage sold ships for scrap.(British Chamber of Shipping Statistical Brief, 1994, p. 25)

Figures are now available from the usual sources to quantify this and according to the latest review from the shipbroker John I Jacobs, tanker owners can at last rationally expect an upturn in their financial fortunes. There is hard evidence that the world's tanker fleet shrank for the first time since 1987. The decline in tonnage came about as scraping exceeded new building deliveries. During the six months period to end December 1994, the commercial fleet of tankers fell by 2.3 million DWT. That forty two tankers of 6 million DWT went to the scrapyards and only 36 ships of 3.8 million DWT were built. The tanker fleet in this study is defined as tankers of more than 10,000 DWT and military tonnage was excluded.(The British Chamber of Shipping, 1994, p 25)

Jacobs noted that this was not only first fall in fleet size for seven years, but was also only the eleventh year in which a decline had been recorded in the post war period. Further nearly all the reduction in 1994 occurred in the VLCC fleet as 17 ships of 4.5 million DWT were scrapped and only 7 of 1.9 million DWT were delivered. If scraping continues at the same level as last year, it is possible that the world tanker fleet will shrink further so, together with higher demand, freight rates could rise sharply by the end of 1995.

Jacobs also noted that in the dry Bulk sector a recovery seems to have commenced in the year 1993. Last June and July 1993, the Baltic Freight Index (BFI), as is mentioned in table 7, was still in the range 1300-1400. However after this it started to rise and the December index averaged 1993. By January 1995 the BIF, the Baltic Exchange's index for Panamax and Capesize tonnage, reached an average of 2017 on the back of firming dry cargo rate levels. Some fall occurred in February but recently in March rates generally were reported to be spiralling up on the back of a firming of Panamax rates. A new ten year record was achieved on 6th March 1995 when the index finished at 2071 and on March 13 the index closed at 2196. The April contract closed at 2257 suggesting that market participants expect the market to rise even

further in the months a head. In line with the general rise for the bulk the SS & Y Atlantic Capesise Index was marked up a further 351 points to 6,466, and it too began to rise and to move out of line with tanker market rates in 1994.

Brokers and other analysts have stated that many major factors are bringing this about and these mainly include rising trade volumes of grain, coal and ore. As regards the forecasts the steel industry is expected to use more iron ore and cooking coal in the year 1995. Prospects for thermal coal are good and grain volumes are expected to rise too and longer shipment distances to China for example, are adding to the tonnage demand. The situation on the demand side looks promising elsewhere given trade forecasts for forest products and minor commodities.(The British Chamber of Shipping, Statistical Brief, 1994, p. 26)

The same source also indicates that key shippers are reported to be increasingly worried about spiralling dry cargo rates. A number of leading operators are still reported to be looking for cover on the future market to protect themselves from further rate rises. Shipowners have become sufficiently confident in 1994 about further market prospects that they began investing heavily in new tonnage. This brings the risk that the supply side situation may start to undermine market rates.

A recent Fearnley's review reports that the total order book for bulk carriers in 1994 was equal to 12.5% of the current tanker fleet. Significant variations were observed in the different size ranges. For larger vessels e.g. Of over 100,000 DWT the figure was a high as 21.1%. From a market viewpoint this, on the face of it, is likely to act as a damper. However given the substantial volume of older bulkers and the fact that some younger vessels have had structural problems, then the supply side from an owner's point of view looks better. Some 17% of the current Capsize and Combi fleet is over 20 years old with a further 13.5% between 17-20 years of age.

So bearing in mind the concern of quite a few countries over technical standards and age, and the strong outlook for demand, the firm market for large bulkers could be maintained for some time to come. But later on a combination of new tonnage and reduced scrapping could serve to depress the market yet again.

TABLE 7. FREIGHT RATES

7. 1 VLCC (WORLDSCALE) ARABIAN GULF-WEST/ARABIAN GULF-UK CONTINENT

MONTH	1988	1990	1991	1992	1993	1994	1995
January	36.0	58.0	78.0	43.1	51.0	34.1	49.5
February	30.0	52.0	88.0	43.9	44.7	31.3	46.0
March	32.0	75.0	57.0	32.5	42.5	35.0	
April	36.6	74.0	43.0	37.2	43.5	34.5	
May	35.0	52.0	62.0	41.0	41.1	33.3	
June	32.0	50.0	80.0	34.8	38.8	33.3	
July	40.0	57.5	61.0	43.4	50.6	41.0	
August	38.7	54.0	57.5	45.0	43.1	46.4	
September	40.0	59.0	53.0	41.3	43.2	41.3	
October	50.6	53.0	56.0	45.5	40.9	43.8	
November	52.7	55.0	57.0	56.3	39.8	45.0	
December	64.0	69.0	42.0	54.3	35.0	46.7	

Source:- The British Chamber of Shipping Statistical Brief 1994.

2.4.2 Earnings of the UK Owned Merchant Fleet

Gross earnings of the UK owned merchant fleet totalled some 4.15 billion Pound Sterling in the year 1993 which presents a rise of 13% in real terms since 1990, and 42% since 1986. Since 1988 the total earnings have been rising and this contributes to

the UK's balance of payments in the form of net direct contribution and total contribution.(See table 8 & 9) and figure 1 at Annex.2.

7. 2 BALTIC FREIGHT INDEX (DRY BULK CARGO)

MONTH	1988	1990	1991	1992	1993	1994	1995
January	1360	1645	1449	1493	1306	1225	2017
February	1522	1594	1596	1306	1329	1154	1990
March	1603	1590	1725	1217	1439	1148	2196
April	1493	1442	1601	1172	1503	1296	2257
May	1400	1319	1668	1266	1599	1475	
June	1267	1213	1707	1169	1537	1345	
July	1192	1101	1568	1066	1373	1402	
August	1220	1201	1491	1067	1393	1480	
September	1280	1188	1540	1053	1416	1537	
October	1320	1243	1608	1062	1367	1811	
November	1458	1307	1622	1208	1296	1862	
December	1512	1437	1538	1359	1232	1993	

Source:- The British Chamber of Shipping Statistical Brief 1994.

2.4.3 Contribution of UK Shipping Industry To Balance of Payments

The UK's balance of payments in the UK Sea Transport Account is based on the fiction that UK exports of goods are valued fob UK port and UK imports of goods are valued fob country of export. Thus for the shipping industry the Sea Transport Account only shows part of the picture since it excludes revenues on goods imported to the UK.

TABLE 8. RECEIPTS AND PAYMENTS BY SHIP TYPE (Mn)

SHIP TYPE	RECEIPTS		PAYMENTS		NET	
	1992	1993	1992	1993	1992	1993
ROLL-ON ROLL -OFF	957	1,091	199	227	758	864
CONTAINER	974	1,196	359	458	615	738
OTHER DRY CARGO	348	341	143	163	205	178
DRY BULK	240	271	119	127	121	144
CRUISE	630	591	286	317	344	274
TANKER	595	661	489	475	106	186
TOTAL	3,744	4,151	1,595	1,767	2,149	2,384

Source:- The British Chamber of Shipping Statistical Brief 1994.

The shipping industry itself regards its true contribution to the UK balance of payments as a sum of export earnings plus the import savings of £ 2.38 billion which takes into account the UK owner's revenues on goods imported to the UK. The contribution to the balance of payments defined in this way has been constantly increasing since 1986,(See Table 9 and figure 2 at annex 2).

So it seems from the table 9 that the contribution of the UK shipping industry to the balance of payments has been increasing in money terms over the last 10 years. In this way UK shipping industry still produces a strong positive contribution, and there would be a further £ 1.1 bn. or so direct impact on the balance of payments if UK

shipping were now to disappear altogether, although it is recognised that some of the resources would be deployed elsewhere in the economy.

TABLE 9. CONTRIBUTION OF UK SHIPPING INDUSTRY TO BALANCE OF PAYMENTS.

Year	Total Revenue	Revenue from abroad	Expenditure abroad	Net direct contribution	Import Saving	Total contribution
	a + b	a	b	a - b	c	(a-b) + c
1980	3,717	3,121	1,976	1,145	596	1,741
1982	3,053	2,407	1,865	542	464	1,188
1984	3,002	2,305	1,866	439	697	1,136
1986	2,923	2,204	1,553	651	719	1,370
1988	3,426	2,516	1,570	946	910	1,856
1990	3,664	2,579	1,567	1,012	1,085	2,097
1992	3,747	2,544	1,594	948	1,203	2,151
1993	4,151	2,854	1,767	1,087	1,297	2,384

Source:- The British Chamber of Shipping Statistical Brief 1994.

The balance of payments contribution only becomes significant if the overall UK balance of payments again is a constraint on the UK economy and implied premium is attached to foreign exchange earnings. Shipping is a net export earner and a direct import saver and it is an efficient converter of foreign exchange.

The UK shipping industry is also a value added industry and it is value added that matters in the micro economy. These value added aspects have not been included in

this study such as, shipbuilding and ship repair, marine equipment industry, marine technology research base, ports, shippers and other commercial services.

The balance of payments in comparison produces no ultimate economic welfare although it has been a constraint in the past on the UK's economic policy objectives. Value added by the UK shipping industry is however now relatively small at about 0.6% of all UK industrial and commercial companies, but shipping also has a large service sector.(The British Maritime Charitable Foundation, 1988, p. 7).

CHAPTER 3

PAKISTAN NATIONAL SHIPPING FLEET AND ITS CONTRIBUTION TO NATION'S ECONOMY

3.1 Historical Perspective

We start by describing the physical, social, political and economical perspectives of Pakistan.

Pakistan emerged on the map of the world as an independent state on 14 August, 1947 as a result of partition of British India into two sovereign Hindu and Muslim states. Lying between the latitudes of 23.30' and 36.45' north and between the longitude of 61 and 75.31 east, Pakistan stretches over 1,600 kilometres north to south and about 885 kilometres broad east to west covering a total area of 796,095 sq. kilometres. It comprises four provinces namely Balochistan, North West Frontier, the Punjab and Sindh. Of these, Balochistan is the largest in area comprising an area of 347,190 sq. kilometres, followed by the Punjab 205,344 sq. kilometres; Sindh 140,914 sq. kilometres; North West Frontier 74,521 sq. kilometres; the federally Administered Tribal Areas (FATA) 27,220 sq. kilometres; and the Federal Capital Area (Islamabad) 906 sq. kilometres.

Pakistan is the ninth most populous country in the world, though area wise it ranks thirty fourth. Among the 37 low income countries, Pakistan is the fourth with population of 120.84 million in 1993, as against 83.78 million in 1981, 65.309 million in 1972 and 32.5 million in 1947.

Pakistan is a land of diversified relief. In the north it is bound by the Himalayan ranges, the Karakoram range and the Hindukush behind it. The Himalayas have an average elevation of 6,100 meters with some of the highest peaks in the world. K-2 (Mount Godwin Austin) , 8,611 meters, is the highest peak of the Karakoram range and the second highest peak in the world. Tirich Mir, 7,736 meters, is the highest peak of the Hindukush. Below the Karakoram is the paralleled range of the Himalayas extending far to the east and on to the west, ending up at the Nanga Parbat peak 8,068 meters, standing 8th in the world rating.

A narrow limb of Afghan territory, called wakhan, separates it from Tajikistan; the nearest points of the two countries being only 16-19 kilometres and the farthest about 90 kilometres. In the north east Pakistan has a common border of about 595 kilometres long with China. In the west, it has a 2,252 kilometres long common border with Afghanistan known as the Durand Line. To the south of Durand line, there is a common border of about 805 kilometres long with the brotherly Islamic Republic of Iran. The Arabian Sea lies in the south and to the east is the Indian territory of East Punjab and Rajasthan with a common border of about 1,610 kilometres long. Of the total area of 796,095 sq. kilometres 475,884 sq. kilometres in the north west and west form a highly differentiated mountainous terrain. The remaining 320,211 sq. kilometres present flat and gradational surface, the whole land, excluding most of Balochistan, falls into the hydrological unit drained by the Indus system of rivers. The unit includes the north western hills, northern and north western submontane, upper and lower Indus plains and parts of Balochistan, which is a region of small rivers. A large part of it forms an area of inland drainage.

Pakistan is comprised of six major physical divisions or regions:

1. Northern mountains
2. Western off-shoots
3. Balochistan plateau
4. Power plateau and salt range.

5. Upper and lower Indus plains and
6. The Thar desert

The river Indus has influenced (Figure 3 annex 3) the people's outlook on life and contributed to the wealth of the nation in terms of agriculture and inland transport link. Rising from the high lands of Tibat from a beautiful spring known as the mouth of lion, it flows through the Karakoram range to enter the northern parts of Pakistan thence its life giving journey of 2,880 kilometres towards the thirsty wasteland of south and west until it embraces the Arabian sea.

Like other great rivers of the region , the Nile, the Tigris and the Euphrates, the mighty Indus gave birth to a remarkable civilisation.When the Europe was still struggling through the dark age, an advanced civilisation flowered in the Indus valley. Ruins of Moenjodaro and Harapa lay bearings to the society which first emerged between 4500 and 5000 years ago. Trade links with ancient civilisations of Egypt and Mesopotamia had also been established. The Indus valley civilisation collapsed around 1500 BC and its people vanished without trace.

The Persians, Greeks, Huns, Mangols and Turks all invaded the valley and left their marks. History speaks of invaders entering through the north and along the banks of river Kabul. Alexander the Great in 327 BC after conquering Greece, Egypt and Mesopotamia, entered the Indus valley from the north, fighting and conquering city after city along the banks of the river Indus. His army constructed 2000 ships which carried his army and stocks southwards to a point called Alexander Haven situated at the mouth of the river. Alexander's army left the sub-continent forever, but also left behind a remarkable know how of building ships.

In AD 712 Mohammed Bin Qasim, a young Arab army commander, landed at the Balochistan coast and marched to the Debul port. He brought with him a new social order and the religion of Islam. Arab rule in the eighth century did not last long and

was replaced by several small feudal principalities. The Arabs brought the know-how of trade, weaponry, shipping and navigation with them which was also passed on to the people of the valley. The Mughals followed the Arabs and ruled from the mid sixteenth to mid eighteenth century.

In the middle of the nineteenth century, the British conquered the entire territory and annexed it to their Indian Empire. The first stages of development towards the modern state took place during the ensuing hundred years of British colonial rule. The British brought with them new technology, administration, irrigation and agriculture expertise. Trade flourished throughout the British reign, with supplies of raw materials flowing to Britain and finished goods in return.

At the end of World War II, Britain was forced to give independence to the colony due to the strong demand of the locals. The Muslims who had earlier to the British ruled the sub-continent for nearly 800 years feared that without communal identity and constitutional safe-guards they would be swamped by the majority Hindus within the new political system introduced by the Britishers i.e. one man one vote (Democracy). Eventually the desire to have a separate homeland for Muslims on the sub-continent crystallised and Pakistan enjoyed the ranks of an independent nation of the world on 14 August 1947. But the unresolved conflict of the state of Jamu and Kashmir posed a problem to the country's economic resources. Separated of an alien territory of a thousand miles breadth, the two territorial regions, i.e. East and West Pakistan, presented serious demographic and economic imbalances which resulted in the separation of East Pakistan as Bangladesh in 1971. The 1971 debacle forced the remaining Pakistan to start afresh the task of state consolidation.

Various social and economical reforms were made, one of which was nationalisation of institutions and key industries including shipping. Regional and provincial conflicts strained the democratic institutions and thus paved the way to a military regime. Phased democratic revival was promised, islamisation of economy and other

institutions was actively introduced, finally a democratically elected government took over after the death of General Zia-ul-Haq in November 1988. Denationalisation of the institutions and privatisation of industries then preceeded at a slow pace and continued until August 1990, when the government was dissolved by presidential order and fresh elections promised for October 1990. One of the important changes in recent years has been the mood of the population towards Islamisation.

To introduce an Islamic system, with its heavy emphasis on the. act of "giving" as the essence of a just socio-economic order must, to reflect God's intention, devise ways and means of checking individual greed so that all members of the society get a minimum sustenance. To introduce reforms in a country like Pakistan, the structure of which has been raised on capitalistic principles, it will be essential for the state to take on increasing responsibilities to ensure society's satisfaction for basic needs.

3.2 Trade and Economics

3.2.1 GDP and GNP

The year 1993-94 has been of great significance to the economy of Pakistan. It witnessed a chain of momentous events that have affected the economy both adversely and positively. The political uncertainty, which had for some time gripped the country and threatened its economy, came at last with the installation of the present elected government on 19 October 1993 as a result of a free and fair general election and subsequent election of the president. The restoration of political stability has enabled the new government to deal effectively with the macro instability persisting for some time and launch wide ranging reforms aimed at structural adjustments in the economy which have since covered considerable mileage towards the cherished goal of macro economic stability. The economy has also been able to absorb the shocks of international recession and national vagaries which caused a

serious setback to the economy's two major crops, wheat and cotton, that sugarcane and rice mitigated with their record production.

The pace of GDP growth revived from 2.3 percent during 1992-93 to 4 percent, as growth of agriculture saw a reversal from a negative 5.3 percent to a positive 2.6 percent. It is worth noting that Pakistan's economy is based on agriculture which contributes about 25% of GDP. The manufacturing sector has shown a rising trend in the year 1993-94, but still the majority of employment is being provided by the agriculture sector. The major crops are wheat, cotton, rice and sugarcane.(Economic Survey of Pakistan, 1993-94, p. XIII).

The above source also indicates that the policy reforms in energy, physical infrastructure and social sectors have set a process in motion that is expected to resolve the existing structural gaps in demand and supply. There have been spectacular gains in macro stability. The foreign exchange reserves have gone way beyond $ 2 billion (US). But for the tight fiscal and monetary policies of the current year, inflation would have been much higher.

GDP growth, which had decelerated to a record low of 2.28 percent in the year 1992-93, has recovered to 3.96% in the fiscal year 1993-94. This growth has been achieved despite a shortfall in agriculture, which is the backbone of country's economy, following the depressed production of wheat and cotton. The agriculture sector has grown by 2.63 percent against a negative growth of 5.28 percent during 1992-93. The steep decline of 15.72 percent in major crops during 1992-93 has been almost arrested in 1993-94. There were hefty increases in the production of rice (28.1%), and sugarcane (17.2%). The major crops would have shown still better growth, had cotton and some other crops not suffered from natural calamities. The other sub-sectors of agriculture namely, minor crops, livestock, fishing and forestry showed growth rates of 3.71, 5.95, 3.38 and 8.03 percent respectively.(Economic Survey of Pakistan, 1993-94, p. XIII).

The growth in the manufacturing sector, which represents about 19% of the country's GDP as a whole, stood at the level of 5.63 percent. Industries having a 63 percent weight in the large scale manufacturing sector include sugar, nitrogenous fertilizer, caustic soda, billets, pig iron, and storage batteries showed a better growth rate of 11.5 percent. This was partly neutralised by a negative growth recorded in industries like cotton ginning, jute goods, paper and boards, trucks and buses, tractors, air conditioners and electric motors. The transport, storage and communication sector was also low at 3.72% as well as trade at 2.63%. The services sectors have maintained the growth rate of 6.53% .(Economic Survey of Pakistan, 1993-94, p.xiv).

According to the Economic Survey of Pakistan 1993-94, the overall economic position is shown as the aggregate at current market prices where the GDP and GNP are 1,554.6 billion rupees and 1,569.4 billion rupees respectively. The growth rate of GDP in real terms at factor cost is 3.96% and GNP 3.83%, whereas the sectoral growth rates are 4.08% in the commodity sector, 2.63% in agriculture, 5.63% in the manufacturing and 3.83% in services sector as is shown in table 10.

The sectoral share in real GDP for 1993-94 is 51.0% in the commodity producing sector and 49.0% in the services sectors. From the commodity producing sectors, agriculture shares 23.3% , manufacturing 8.6% and mining and quarrying 0.5%. Agriculture has shown a continuous decrease since 1989-90 except for 1991-92. Manufacturing has been constant since 1992-93. Services have shown a constant increase since 1989-90,(See table 11).

3.2.2 Exports and Imports

The target of exports set out in the 1993-94 budget was not achieved due to a decline in cotton production and depressed prices for a number of products and a continued international recession. The earnings from exports during 1993-94 (July-April) stood

TABLE 10 SECTORAL REAL GROWTH RATES IN GDP AND GNP

(in percent)

SECTOR	GROWTH RATE				
A. Commodity Producing	1989-90	1990-91	1991-92	1992-93	1993-94
1. Agriculture	3.03	4.96	9.50	-5.28	2.63
2. Manufacturing	5.72	6.25	8.05	5.38	5.63
3. Mining & Quarrying	9.56	10.36	2.44	3.00	5.75
4. Construction	3.12	5.70	5.98	5.80	3.70
5. Electricity & Gas Distribution	14.61	11.00	9.07	7.03	6.10
B. Services Sectors					
6. Transport, Storage & Communications	6.54	6.31	10.46	6.27	3.72
7. Wholesale & Retail Trade	3.49	5.35	7.33	2.86	2.63
8. Finance & Insurance	0.15	1.23	4.34	8.02	7.75
9. Ownership of Dwellings	5.28	5.28	5.28	5.28	5.28
10. Public Admin.& Defence	2.73	3.30	2.58	2.46	1.30
11. Services	6.53	6.53	6.53	6.53	6.53
12. GDP (fc)	4.58	5.57	7.71	2.28	3.96
13. Net factor income from abroad	14.93	-44.90	-47.67	13.17	-7.95
14. GNP (fc)	4.96	3.60	6.56	2.39	3.83

Source:- Economic Survey of Pakistan, 1993-94, Finance Division Govt. of Pakistan.

at $ 5,447.17 million, registering a decrease of 11.3% over the corresponding period of 1992-93. This was mainly on account of a sharp fall in the export of rice and raw cotton. The exports excluding rice and raw cotton, amounted to $5,177.80 million during July April 1993-94, against $5,096.04 million during the same period in 1992-93, showing an increase of 1.60 percent. By excluding the cotton group, as a whole

the increase in exports stands at 2.21 percent. The major exports of Pakistan are shown in table number 12,(Ecnomic Survey of Pakistan, 1994, P. 80).

TABLE 11. SECTORAL SHARE IN GDP (REAL)

(in percent)

SECTORS	SHARE				
	1989-90	1990-91	1991-92	1992-93	1993-94
1. Commodity Producing	51.4	51.5	52.0	50.9	51.0
a. Agriculture	25.8	25.7	26.1	24.2	23.9
b. Manufacturing	17.6	17.7	17.8	18.3	18.6
c. Mining & Quarrying	0.5	0.6	0.5	0.5	0.5
d. Construction	4.1	4.1	4.1	4.2	4.2
e. Electricity & Gas Distribution	3.3	3.5	3.5	3.7	3.7
2. Services Sectors	48.6	48.5	48.0	49.1	49.0
a. Whole Sale & Retail Trade	16.5	16.5	16.4	16.5	16.3
b. Transport, Storage & Communication	9.5	9.6	9.8	10.2	10.2
c. Finance & Insurance	2.4	2.2	2.2	2.2	2.3
d. Ownership of Dwellings	5.5	5.4	5.3	5.5	5.5
e. Public Admin. & Defence	7.3	7.1	6.8	6.8	6.6
f. Services	7.6	7.6	7.6	7.8	8.1

source;- Economic Survey of Pakistan 1993-94. Finance Division, Govt. Of Pakistan.

TABLE 12. MAJOR EXPORTS OF PAKISTAN. (MILLION RUPEES)

(July - April)

ITEMS	1989-90	1990-91	1991-92	1992-93
1. FISH & FISH PRODUCTION	2,024	2,576	2,852	3,192
2. RICE	5,114	7,848	10,340	6,253
3. RAW WOOL	267	196	204	127
4. RAW COTTON	9,550	9,553	12,944	5,922
5. COTTON WASTE	597	1,255	1,482	935
6. LEATHER	6,002	6,184	5,991	4,340
7. COTTON YARN	17,917	26,675	29,170	20,640
8. COTTON THREAD	65	76	93	96
9. COTTON CLOTH	12,000	15,199	20,372	15,969
10. PETROLEUM PRODUCTS	235	2,288	2,048	1,516
11. SYNTHETIC TEXTILE	4,556	7,807	10,403	9,239
12. FOOTWEAR	504	724	997	778
13. ANIMAL CASINGS	260	309	289	185
14. GUAR PRODUCTS	896	653	616	425
15. TOBACCO RAW & MANUFACTURED	213	116	271	157
16. READY MADE GARMENTS & HOSIERY	14,341	18,666	25,823	19,689
17. DRUGS & CHEMICALS	476	350	555	——
18. SURGICAL INSTRUMENTS	1,520	1,901	2,253	2,088
19. CARPETS AND RUGS	4,923	5,003	5,709	3,008
20. SPORTS GOODS	2,311	3,099	3,515	2,173

Source:- Pakistan Year Book, twenty first edition, 1993-94.

The exports of manufactured goods in the total exports has shown a positive change. Its share in the total exports has in the past constantly been increasing which is indicative of the fact that the country is industrialising and more export earnings will now accrve from the export of manufacturing goods. The share of semi-manifactured

goods has declined, while a change in the share of primary commodities is negligible as is detailed in table 13.

TABLE 13. ECONOMIC CLASSIFICATION OF EXPORTS (JULY-MARCH)

EXPORTS	1990-91	1991-92	1992-93	1993-94
PRIMARY COMMODITIES	19.0	14.8	15.5	11.0
SEMI-MANUFACTURES	21.4	20.6	20.2	22.4
MANUFACTURED GOODS	59.6	64.6	64.3	66.6

Source:- Federal bureau of Statistic Government of Pakistan

The base of Pakistan's exports have diversified with emphasis on higher value added goods. This is evident from a marked increase of 21.3 percent in the other export items, which largely include newly emerged diversified varieties of manufactured and semi- manufactured products. Nevertheless, the exports sector is still concentrated on a few products like raw cotton, cotton manufactures, rice, leather and leather manufactures which account for 69.4 percent of the total exports,(Economic Survey of Pakistan, 1994, P.80).

The products of Pakistan are exported to a fairly large number of countries. The USA, Germany, and UK are the principal buyers followed by Japan, Saudi Arabia and France. These six countries alone accounted for 44.6% of Pakistan's exports during the year 1992-93. The percent share of three years is given in table 14.

Pakistan's share in the world exports has risen from 0.16 percent in 1987 to 0.18 percent in 1991. Among the major commodity groups, the share of textile and clothing increased while that of carpets and rugs, leather and leather goods and fish and fish products declined. The detail is given in table 15.

TABLE 14. DIRECTION OF EXPORTS AND ITS SHARE.

COUNTRY	1990-91	1991-92	1992-93
JAPAN	8.3	8.3	6.8
USA	10.8	12.8	13.9
GERMANY	8.9	7.1	7.8
U.K	7.3	6.6	7.1
SAUDI ARABIA	3.6	4.3	4.7
KUWAIT	0.1	0.4	0.6
FRANCE	3.8	3.9	4.3
ITALY	3.8	3.2	2.6
SOUTH KOREA	3.9	2.9	2.4
CHINA	1.0	0.8	0.6
MALAYSIA	0.5	0.9	0.8
NETHERLANDS	2.0	2.2	2.6
OTHERS	43.8	46.6	45.7
TOTAL	100.0	100.0	100.0

Source:-The Economic Survey of Pakistan 1993-94. Finance Division Govt.of Pakistan

The imports bill for July-April 1993-94 stood at $ 6,974.82 million against $ 7,982.14 million in 1992-93, indicating a fall of 12.62 percent over the corresponding period of the year 1992-93. The import items registering a fall were machinery (including transport equipment), petroleum crude, insecticides, medical products, edible oil, road motor vehicles, wheat, tea, paper and paper board, silk yarn, synthetic fibre, rubber, sugar and pulses. The items which recorded an increase were petroleum products, plastic materials, fertiliser, iron and steel and milk and milk food,(Economic Survey of Pakistan, 1994, P.80).

A Prominent change in imports has been witnessed as an expenditure on imports of food items has considerably decreased. The import bill on the imports of edible oil, wheat, tea, and sugar has reduced from US$ 1,178.626 million (July-April 1992-93) to US$ 818.901 million in the corresponding period of 1993-94, recording a decrease of 30.5 percent. This healthy change is indicating that Pakistan should realise self-sufficiency in food in the future.

TABLE 15. PAKISTAN'S SHARE IN WORLD EXPORTS ($ Million)

Exports	1987			1990			1991		
	World	Pak.	Share	World	Pak.	Share	World	Pak.	Share
Textile & Clothing	166,200	2,447	1.47	224,300	3,689	1.64	196.834	4,423	2.25
Carpets, Carpeting & Rugs	1,089	225	20.66	1,338	232	17.34	1,123	217	19.32
Leather & Leather goods	7,947	270	3.40	11,112	314	2.83	10,660	271	2.54
Fish & Fish Products	22,126	121	0.55	28,684	107	0.37	31,982	110	0.34
TOTAL	2,527,885	4,105	0.16	3,485000	5,522	0.16	3,506000	6,464	0.18

Source:-The Economic Survey of Pakistan 1993-94. Finance Division Govt.of Pakistan

The major imports of Pakistan and their share is shown in table 16 and major countries of imports and their share in table 17.

The share of export and import markets have been as follows:

1. Organisation of Islamic Countries (OIC) 13.54 percent and 20.2 percent
2. Organisation of Economic Co-operation and Development (OECD) countrie 61.0

percent and 52.67 percent

3. South Asian Association for Regional Co-operation (SAARC) countries 2.7 percent and 1.61 percent
4. Association of South East Asian Countries (ASEAN) 4.08 percent and 9.41percent
5. Rest of the World 5.38 percent and 4.91 percent (See table 18)

TABLE 16. MAJOR IMPORTS OF PAKISTAN AND PERCENT SHARE

S.NO.	COMMODITY	1993-94	1992-93
1.	MACHINERY(Including transport equipment))	21.79	24.41
2.	PETROLEUM CRUDE	5.27	5.61
3.	PETROLEUM PRODUCTS	11.73	10.12
4.	CHEMICALS	17.52	15.16
5.	EDIBLE OIL	5.99	5.70
6.	ROAD MOTOR VEHICLES	6.94	8.72
7.	WHEAT UNMILLED	2.71	5.68
8.	IRON AND STEEL	3.69	3.04
9.	TEA	2.20	2.21
10.	PAPER AND PAPER BOARD	1.45	1.45
11.	SILK YARN	0.71	0.76
12.	SYNTHETIC FIBRE	1.27	1.16
13.	MILK AND MILK FOOD	0.32	0.20
14.	RUBBER CRUDE	0.44	0.39
15.	SUGAR	0.21	0.27
16.	PULSES	0.64	0.91
17.	OTHERS	17.13	14.22

Source:- Economic survey of Pakistan 1993-94, Finance Division, Govt. of Pakistan

According to the official sources the overall fiscal deficit for the year 1993-94, which was budgeted at Rs. 64.6 billion, equivalent to 4.8% of GDP, actually turned out to Rs. 107.9 billion, 7.9% of GDP. The deficit budgeting (bank borrowing

for budgetary purposes) budgeted at 21.4 billion was actually thrice the budgeted size, i.e. Rs. 62.6 billion which was equal to 4.6 % of GDP. The outstanding domestic debt rose by 15.9 percent during 1992-93 and was 44.5% of GDP.

The budget deficit for fiscal year 1993-94 was budgeted at Rs. 8.5 billion (equivalent to 5.4 % of GDP).

ABLE 17. MAJOR SOURCES OF IMPORTS

COUNTRY	1990-91	1991-92	1992-93
JAPAN	13.0	14.3	15.9
USA	11.8	10.5	9.4
GERMANY	7.3	8.0	7.5
U. K.	4.9	5.5	5.2
SAUDI ARABIA	6.2	5.2	5.4
KUWAIT	0.7	0.9	3.3
FRANCE	2.9	4.7	4.2
ITALY	3.5	4.1	3.4
SOUTH KOREA	2.8	3.3	4.5
CHINA	5.1	4.3	4.2
MALAYSIA	4.0	4.2	5.1
NETHERLANDS	1.8	1.6	2.0
OTHERS	36.7	33.4	29.9

Source:- Economic survey of Pakistan 1993-94, Finance Division, Govt. of Pakistan

This budget financing (bank borrowing for budgetary purposes) was budgeted at Rs.12.8 billion (equivalent to 0.8 % of GDP) which fell by 8.6 million compared to 21.4 billion in 1992-93. The overall position of the budgetary deficit improved in 1993-94. The total remittance from workers abroad in 1993-94 as projected is 1071.23 US dollars which showed a fall of US $ 491.01 million in 1992-93 and $ 396.25 million in 1991-92. This remittance from workers abroad is regarded as a very important contributor to the balance of payments.

TABLE 18. DIRECTION OF PAKISTAN'S TRADE (MILLION RUPEES)

REGION	EXPORTS	% SHARE	IMPORTS	% SHARE
OIC	19856	13.54	37704	20.20
OECD	89326	61.00	98336	52.67
SAARC	3984	2.7	3012	1.61
ASEAN	5990	4.08	17561	9.41
OTHER ASIANS	19495	13.30	20900	11.20
REST OF THE WORLD	7894	5.38	9174	4.91
TOTAL	146545	100.00	186687	100.00

Source:- Economic Survey of Pakistan 1993-94, Finance Division, Govt. of Pakistan

3.2.3 Seaborne Trade of Pakistan

Seaborne trade of Pakistan takes care of 98 % of the total foreign trade of Pakistan. The rest of the movement of the goods is by air, rail and road. In order to have a clear picture of the pattern of foreign trade of Pakistan, one has to look at it in the context of the regional distribution of the trade and commodity composition in terms of dry cargo and liquid cargo,(M.Ashiq Khan, 1992-1993, P.104).

The regional distribution of Pakistan's trade in terms of cargo handled in million tonnes is shown in the table 19. Trading regions to which the cargo is moved are, South and East Asia, the Red Sea, West Africa, and Central America. For imports as well as exports, the main trading regions are, UK and North European Continent, South and East Asia, the Red Sea and the Mediterranean sea, the Gulf of Maxico and

North America. For general cargo imports as well as exports, most contributing regions are the UK and the North European Continent and South East Asia.

On the other hand, dry bulk imports are mainly from North America and Oceanea, while dry bulk exports are mainly to South and East Asia, the Red Sea, the Middle East and Persian Gulf, the UK and the North European Continent regions

For the liquid bulk trading, main import regions are the Red Sea, the Middle East and Persian Gulf, South and East Asia and North America, while exports are mainly to UK and the North European Continent, the the Red Sea and Middle East- Persian Gulf and South East Asia.

TABLE 19. SEABORNE TRADE OF PAKISTAN (MILLION TONNES)

YEAR	KARACHI PORT	BIN QASIM PORT	TOTAL
1991-92	20,452	7,170	27,622
1992-93	22,170	8,061	30,231
1993-94	16,620	5,582	22,202

Source:- Economic Survey of Pakistan 1993-94. Finance division; Govt. Of Pakistan

It may be seen that the seaborne trade fell about 8,029 million tonnes in 1992-93, and 5,420 million tonnes in 1993-94. Although in previous years cargo traffic has been steadily increasing . However a major increase has been in liquid bulk cargo. The dry general cargo has been almost static during the last three years. The mode of carrying cargo in containers has also shown a steady increase.

3.3 PORTS OF PAKISTAN

Currently there are two sea ports in the country, Karachi Port and Port Mohammad Bin Qasim. The Karachi port is the premier port of Pakistan handling nearly 95 percent of the cargo, dry and liquid. Port Qasim, the first multi-purpose and industrial port and the second deep sea port is situated 50 kilometres south east of Karachi and was built to provide alternate port facilities and to handle raw material imports for Pakistan Steel Mill,(Economic Survey of Pakistan, 1994, P.32).

The second mini port, cum fish harbour, at Gawadar, built at a cost of Rs. 1,750 million, was inaugurated on 15 March 1993. The first mini port at Pasni, already completed at a cost of Rs. 560 million, is working quite well and is performing sea trade and export of fish and shrimps to foreign and home markets. Besides the opening of a mini port, a foundation stone was also laid for a deep sea port at Gawadar to be built at a cost of Rs. 1,682 million, including a foreign exchange component of Rs. 849 million. It will take about 3 years to complete and would accommodate vessels of 100,000 DWT, providing first class services as an international port for trade and traffic for the Central Asian States, Afghanistan, Pakistan and the rest of the world. There will also be ancillary facilities like oil an refinery and a shipyard besides regional wherehouses. An export free zone would also be established there. The Gawadar port would be a gateway to economic development of the Economic Co-operation Organisation (ECO) countries, viz Pakistan, Iran and Turkey,(Pakistan Year Book, 1994, P.567).

During the first nine months of 1993-94, the Karachi port handled 16.62 million tones as against 22.17 million tonnes during the year 1992-93 showing a decrease of 5.55 million tonnes, however it had been constantly increasing in the previous years. The same situation exists there at Port Qasim where 5.582 million tonnes of cargo was handled in the first nine months of 1993-94 as compared to 6.226 million tonnes

during the same period of the year 1992-93, indicating a decrease of 0.644 million tons,(Pakistan Year Book,1994, P. 456).

The Karachi harbour is now in a position to accommodate large size vessels having deep draught since Karachi Port Trust took intensive and extensive dredging operations on the approach channel for more than a year. The two hundred feet wide approach channel has been dredged to a minimum depth of 30 feet and this enables large size vessels to reach the harbour area safely. With a view to provide quick and safe movement to the large ships, the harbour channel has been lighted with solar powered lights and the port is now open for night navigation for larger vessels, which are now berthing and leaving the port around the clock without any delay,(Pakistan Year Book, 1994, P. 567).

The Port Quasim Authority has also designed a gigantic RS. 5 billion five year investment programme for the development of the port. Of this, RS. 3 billion would be invested by the private sector and RS. 2 billion by the public sector. The private investment will be for the oil terminal costing 80 million US dollars, the grain terminal costing 20 million US dollars, and a container terminal costing 2 million dollars. The agreement has already been made with the Cane American and Fuiji Foundation for the construction of the oil terminal which should be operative by the end of 1995. The public sector investment will include deepening of the navigation channel after which the port can accommodate vessels up to 65,000 DWT. The plan also includes replacement of existing equipment and acquisition of new equipment including navigation craft like pilot boats, survey boats, and tugs,(Pakistan Year Book, 1994, P.568).

3.4 SHIP BUILDING

There are three yards in Pakistan, the PN Dockyard, Karachi Shipyard and Gadani Shipyard (Shipbreaking). P.N. Dockyard has recently built a 180 tonnes patrol craft

which has now been commissioned in the Pakistan Navy and named P.N.S Larkana. The Ministry of Defence will soon be acquiring the control of the Karachi Shipyard and Engineering Works (KSEW) to raise the ship building activities,(Pakistan Year Book, 1994, P.456).

The Karachi Shipyard carried out ship repairs worth Rs. 250 million in 1992-93 as against repairs worth Rs. 175 million in the year 1991-92 showing an increase of 70 percent. The repairs carried out were for the Pakistan Navy Rs. 115 million, KPT Rs. 98 million, PNSC Rs. 3 million, Port Qasim Rs. 7 million and foreign ships Rs. 6 million,(Pakistan Year Book, 1994, P.456).

3.5 SHIP BREAKING

The ship breaking industry showed improvements in 1992-93 as it collected a total revenue of Rs. 1,067 billion whereas about Rs. 759 million scrap procured was 512,541 tonnes as against 338,034 tonnes in the preceding year showing an increase of 29 and 35 percent respectively. During the year 44 vessels were dismantled. According to a shipbreaker, these figures are viable because the worst-hit year was 1990-91 when only 19 vessels were dismantled and the revenue amounted to Rs. 377 million and in terms of tonnage it was estimated at 169,812 tonnes. The Gadani Shipyard is fast developing into an international open market for old ships and many people associated with the industry predicted it could assume the role of one of the leading scrap suppliers to the world. Gadani has obvious advantages over the neighbouring yards as well as most of the European ones because of its strategic location, cheap labour and an adequate infrastructure facilities,(Pakistan Year Book, 1994, PP. 456-457).

3.6 PAKISTAN SHIPPING

3.6.1 History

Initially Pakistan had two parts about 1000 miles far from each other. Thus shipping provided the only economical transport link for maintaining the life line of trade and commerce in between these parts.

The private sector was first to provide the only three ships available to cater for trade and commerce between East and West Pakistan since its independence in 1947. S.S. Fatima was the first ocean going vessel of Liberty class. Growth of a Pakistan flag merchant fleet started after that period. The Pak. Fleet increased to 41 vessels, all second hand vessels, of vintage class by the year 1960, compared to fleet of 14 ships in 1950. With the acquisition of the second hand vessel M.V. Almurtaza and the new built M.V. Shams an era of motorship was started in Pakistan,(Syed Sajid Saghir, 1986, P. 107).

Shipping in Pakistan is governed by the Merchant Shipping Act of 1923, which regulates registration, construction, surveys, safety and operation of ships, delivery of goods, liability of shipowners, employment of personnel on board and other legal matters. The Ports and Shipping Wing of the Ministry of Communications is responsible for overseeing the shipping and implementing the requirements of the act.

After independence, the increased tonnage was required to meet the expanding shipping services as the process of industrialisation advanced. So the private entrepreneurs started to acquire the ships to meet the trading requirements between East and West Pakistan. This continued till 1963 with all shipping in the private sector. Most of the ships owned by the private shipping companies were old and concentrated their operation on the lucrative trade between the two wings of Pakistan. Services provided by them did not meet the international requirement of the

country. The government, therefore, found it necessary to establish the National Shipping Corporation under the ordinance No. IV of 1963 dated 8 September, 1963 with the intention to provide for establishment of a corporation for the purpose of ensuring better operation and development of shipping and ocean transport services and for the purpose connected therewith.

According to the Act, it should be the function of the corporation to provide safe and efficient shipping service in both international and inter-provincial routes and to carry out all forms of activities connected with or ancillary to shipping.
With the formation of the National Shipping Corporation (NSC), it started its operation in 1964 by acquisition of M.V. Rupsa and very rapidly expanded its fleet to 32 ships in 1971 by acquiring new as well as second hand modern vessels. A marked change in the structure of national merchant fleet and other associated services took place.
The growth in the the NSC fleet also provided a stimulus to private shipowners. Many of the old ships of private shipowners at the time of establishment of the NSC were replaced with relatively modern ships.

In 1971 the private fleet comprised 37 ships. During the 1971 war with India, and subsequent separation of East Pakistan now Bangladesh, a number of ships were lost and the fleet of NSC as well as that of, private shipping companies started to decline. On 1 January 1974, the government decided to nationalise all shipping in Pakistan along with all major industries of the country. Nine shipping companies with 27 ships in the private sector were taken over by the government and subsequently merged into the Pakistan Shipping Corporation (PSC) in 1976.

For three years the NSC and PSC worked in parallel. However, the arrangement did not prove satisfactory, as the two organisations tended to under cut each other, rather than compete with other international operators. The government, therefore, decided

to merge the two organisations. Thus the Pakistan National Shipping Corporation (PNSC) came into being on 1 January 1979, through the Ordinance No. XX of 1979.

The functions of PNSC were described as follows:
"It shall be the function of the corporation to assume full and effective control of entire undertakings of PSC and NSC as transferred to and vested in it by section 7 of the ordinance, and the whole affairs thereof, and to provide and further develop safe, efficient, adequate, economical and properly co-ordinated shipping services, coastal as well as international, and to engage in all forms of activities connected with or ancillary to, or conducive to shipping.

One of the shipping companies , Pan Islamic Steamship Company, was denationalised in 1980 and it started to operate as a separate shipping company in the private sector. At present it owns 5 ships.

Till 1981, PNSC mainly handled shipment of general cargo. To generate capability for the shipment of liquid cargo imported by Pakistan, PNSC in collaboration with PERAC, established the National Tanker Company in 1981 as a joint venture for transportation of crude oil and petroleum,(PNSC, 1994, PP. 1-3).

3.6.2 Objectives of Pakistan National Shipping Corporation

Besides the basic functions mentioned above stipulated in the Ordinance No. XX of 1979, PNSC serves the following objectives:

(a) To serve the trade of Pakistan by operating services to areas of major trades of Pakistan.

(B) To maintain stabilising influence on the freight rates charged by the conferences and other liner services operating to Pakistan.

(c) To earn and save foreign exchange on freight and thus contribute towards the balance of payments.

(d) Besides carrying cargo during peace, PNSC provides a strategic link in times of emergencies.

3.6.3 Sharing Holding of Pakistan National Shipping Corporation

Share holding structure of PNSC has developed as a result of various changes that have taken place since establishment of NSC. Originally NSC was established with 25% government and 75 % public share holding. Various events like separation of East Pakistan, nationalisation of private shipping and merger of NSC and PSC into PNSC increased the government share to about 75%.

On 12 February 1990, the Economic Co-ordination Committee of the cabinet approve the following main decisions to revive the PNSC.

- PNSC may be financially restructured.
- For all government and public sector cargoes the PNSC should have the First Right of Refusal.
- PNSC Board may be allowed to purchase the following ships
    a. 5 Container ships
    b. 2 Bulk Carriers
    c. 1 Edible Oil Tanker
    d. 1 Crude Oil Tanker
    e. 1 Product Tanker

Thus, the government holding share in PNSC was further increased by Rs. 643 million. Due to financial restructuring the present share holding of PNSC is as follows:

Authorised Capital	Rs. 2,000 million
Paid up Capital & Reserve	Rs. 1,270 million
Government share	89.1%
Share of Govt. Sponsor Institutions	5.0%

Share of Private Sector	5.9%

3.6.4 Pakstan Owned Merchant Fleet

The Pakistani fleet consists of ships owned by PNSC, Pan Islamic Steamship Company Limited, Tristar Shipping Line Limited, Milwa Shipping Company and National Tanker company Ltd. From these PNSC and National Tanker Company are public owned shipping companies and the rest are private shipping companies. The Pakistani flag fleet consisted of its highest number of ships i.e. 58 in 1979, 55 in 1981 and therefrom went on declining continuously year after year. The strength of Pakistani flag fleet stood at 30 in 1987, 20 in 1990, 29 in 1992 and 28 in 1993. This happened because of the disposal and scrapping of old uneconomic ships by PNSC from her fleet. On analysing the average age it is observed that in December 1979, Pakistani fleet had an average age of 16.2 years which dropped to 14.1 years in 1980 and thereafter declined slightly each year and stood at 12.7 years in December 1984. Subsequently, the age rose and in 1987 it stood at 14.1 years and 14.5 in 1993. The average age and size of the Pakistani flag fleet is given in table 20 below.

3.6.5 PNSC Fleet

The average age and the size of PNSC fleet is shown in table 21 since its inception. It may be seen that the PNSC fleet on 31st December, 1979 stood at 42 vessels with total dead-weight tonnage of 546,112 tons. The fleet increased in the number of vessels and reached 50 ships in 1981 having 709,212 DWT. The increase in the number of ships and tonnage was due to acquisition of new multi-purpose cargo ships under the fifth five year plan.

With the introduction of new vessels to the fleet, the average age of the fleet also decreased remarkably, and the scrapping programme for the old and uneconomical vessels was taken up and a number of ships were disposed of for scrapping during the

fifth to seventh five year plans. This caused a significant drop in the size of the fleet dropping from 43 ships in 1982 with a total dead-weight tonnage of 629,902 tons to 29 ships and 19 in June 1994 with tonnage reduced to 313,040 DWT. The average age of the ships showed an improvement over the years i.e. 12 years in 1982 and dropping to 10.8 years in 1984. However, the age continued to increase thereafter, because the vessels acquired under the fifth five year plan had become comparatively older and the average age went up to 12 years by December 1986, 16 years in 1992 and 17.4 years in 1994. The average size of the fleet in terms of DWT, however showed continued upward trend of 16,475 DWT in June 1994 compared to 13000 DWT in 1979.

TABLE 20. PAKISTANI FLAG MERCHANT FLEET (1000dwt and above)

YEAR	NO. OF SHIPS	TOTAL DWT	AVERAGE AGE
1979-80	58	580,225	16.2
1980-81	50	645,450	14.2
1986-87	30	522,517	13.4
1989-90	28	492,400	14.1
1991-92	28	494,956	14.2
1992-93	29	518,953	14.7
1993-94	28	496,914	14.2

Source:- Statistical Supplement 1993-94, of Economic Survey of Pakistan, Finance Division, Govt. Of Pakistan.

The particulars of the PNSC fleet as in June 1994 are given in table 22. The fleet comprised of twelve multi-purpose general cargo ships acquired during 1978-83, six general cargo ships and one passenger ship the M.V. Shams for carrying pilgrims to Jeddah, Saudi Arabia. All of the twelve multi-purpose general cargo ships have container carrying capacity ranging from 381 TEU to 770 TEU.

TABLE 21. PNSC FLEET (1000 DWT AND ABOVE)

YEAR	NO. OF SHIPS	TOTAL DWT	AVERAGE AGE	AVERAGE SIZE
1979-80	42	546,112	15.0	13,000
1980-81	45	620,685	13.3	13,800
1981-82	50	709,212	12.5	14,200
1982-83	43	629,902	12.0	14,600
1983-84	41	610,504	11.8	14,900
1984-85	34	512,326	10.8	15,000
1985-86	30	451,793	11.2	15,000
1986-87	29	449,983	12.0	15,500
1987-88	29	449,983	13.1	15,500
1988-89	29	449,983	14.1	15,500
1989-90	29	449,983	15.1	15,500
1990-91	27	423,361	15.5	15,680
1991-92	22	357,547	15.0	16,252
1992-93	22	357,547	16.0	16,252
1993-94(July-March)	22	357,547	17.0	16,252
1994 (June)	19	313,040	17.4	16,475

Source:-1Economics Srvey of Pakistan 1993-94, Finance Division, Govt. of Pakistan.

2. PNSC Report for the year 1993-94.

Besides the PNSC fleet, the National Tanker Company has one tanker M.T.Johar of 89,500 DWT and 43,430 GRT. In the private sector, the Pan Islamic Steamship Company has four general cargo ships and one passenger ship with a total of 53,253 DWT.

The Tristar Line had started operation with one bulk carrier, M.V. Delta Star with a dead weight of 34,686 metric tons. The company has purchased two more bulk carriers each of 40,000 metric tons. Milwa Shipping Company became the third private sector shipowning company to register a 2,000 DWT container fitted vessel, the M.V. Mustansir. The company intends to launch a regular feeder service between Karachi and the Gulf ports.

The World shipping had its due effect on the shipping industry in Pakistan. In order to ride the depression, the PNSC had to scrap further tonnage which had become uneconomic due to age and obsolescence factors. Replacement tonnage though envisaged in the sixth five year plan 1983-88 has not yet been acquired. The sixth five year plan had the following vessel allocation:

- 4 Full container vessels
- 5 Multi-purpose general cargo vessels.
- 4 Bulk Carriers of about 50,000 DWT
- 1 Crude oil tanker of about 80,000 DWT
- 1 Special Product Tanker of about 15,00 DWT.

The acquisition of the new tonnage has been delayed due to various economical and political reasons. It is, however, expected that some specialised tonnage will be acquired soon, because the Prime Minister Benazir Bhutto very graciously directed the addition of the above mentioned vessels in the PNSC fleet by new acquisition. The matter is now with Economic Coordination Committee (ECC) for final approval. Meanwhile, it was decided that simultaneously immediate steps may be taken to initiate an action to build new ships at Karachi Shipyard and Engineering Works Limited.

TABLE 22. PARTICULARS OF PNSC FLEET ON 30 JUNE 1994.

S: No.	Vessel Name	Year of Built	DWT	GRT	NRT	Type of Ship
1.	m.v. Islamabad	1983	18,204	12,518	6,913	Multi-purpose-
2.	M.V. Khairpur	1981	16,430	12,010	6,884	General Cargo
3.	M.V. Sibi	1981	16,436	12,010	6,884	- do -
4.	M.V. Kaghan	1981	18,050	11,940	7,180	- do -
5.	M.V. Ayubia	1981	18,050	11,940	7,180	- do -
6.	M.V. Sargodha	1980	18,242	12,438	6,920	- do -
7.	M.V. Malakand	1980	18,724	12,478	6,926	- do -
8.	M.V. Multan	1980	18,257	12,436	6,917	- do -
9.	M.V. Bolan	1980	18,153	12,478	6,910	- do -
10.	M.V. Hyderabad	1980	18,257	12,436	6,917	- do -
11.	M.V. Chitral	1980	18,144	12,478	6,910	- do -
12.	M.V. Makran	1979	23,490	16,240	8,647	- do -
13.	M.V. Hunza	1972	15,928	10,684	6,239	General Cargo
14.	M.V. Hinglaj	1972	15,928	10,684	6,239	- do -
15.	M.V. Ocean Envoy	1972	15,215	9,126	6,068	- do -
16.	M.V. Kaptai	1968	13,330	10,216	5,576	- do -
17.	M.V. Shalamar	1970	13,391	8,942	5,040	- do -
18.	M.V. Lalazar	1974	13,539	9,025	5,375	- do -
19.	M.V. Shams	1960	5,772	8,929	5,300	Passenger Ship
TOTAL			313,040	219,008	125,025	

Source:- PNSC Report for the year ended 30 June 1994.

3.5.7 Shipping Services Of PNSC

1. Shipping services operated by PNSC are the following:

1. Liner Service.

PNSC operates liner services as a member of India- Pakistan- Bangladesh Conference (IPBC) and Japan- India- Pakistan- Middle East Gulf Conference (JAPPERCON) out side conferences, and it operates regular liner services besides participating in tramp/ chartering operations for various bulk commodities. These services are operated against pre-announced schedules on the following routes:

- Pakistan- Far East- Middle East Gulf
- Pakistan - UK - Europe - Middle East Gulf
- Pakistan - USA / Canada East Coast.

While performing these services, PNSC ships lift a substantial volume of cargo between foreign countries. Pakistan - Far East- Middle East Gulf Line is the major service operated by PNSC. On the average, one sailing is mounted on this route every 15 days. Pakistan - UK - Europe - Middle East Gulf is one of the two major lines operated by PNSC. PNSC's own vessels sail on this route every 20 days. Moreover, there is a slot chartering arrangement for movement of containers every 12 days.

With the decline in defence and economic aid from the USA, the availability of cargo from the USA has been reduced substantially. PNSC is also facing a shortage of ships. Although the monthly service is intended, the frequency of service on this route has been reduced.

2. Tramp/ Chartering

Bulk commodities, usually in large quantities, and their shipment do not allow a definite schedule. For shipments of various commodities such as the rice export and imports of fertilizer, iron ore, coal, wheat and rock phosphate, PNSC utilises her own tonnage as well as chartered tonnage.

3. Passenger Service.

PNSC owned one old passenger vessel the M.V. Shams which is used during the Hajj season only for transportation of Hajjis. During the off- Hajj season, the vessel is also used for transportation of passengers to Jeddah for Umra.

4. Crude Oil Transportation

A joint venture between PNSC and PERAC for the transportation of crude oil under the banner of the National Tanker Company, operates their own tanker M.V. Johar.

3.6 SHARE OF NATIONAL FLEET IN FOREIGN TRADE

Except for part of the general cargo, rice, rock phosphate, crude oil and defence cargo, the major share of seaborne trade of Pakistan is lifted by foreign shipping companies. According to the principle adopted by the UNCTAD for liner cargoes, the national flag vessels are entitled to carry 40 percent of the national trade, 40 percent is allowed to the other trading partner and 20 percent for ships of third countries.

The following figures for seaborne trade of Pakistan during 1992-93 give an indication of the share of national trade lifted by the entire merchant fleet of Pakistan, including the PNSC, the NTC; and the Pan Islamic Steamship Company.(See table23)

TABLE 23. SHARE OF PAKISTANI MERCHANT FLEET IN TOTAL NATIONAL TRADE (1992-93)

(Million Tons)

	OWN VESSELS	CHARTERED VESSELS	FOREIGN VESSELS	TOTAL SHARE
IMPORTS	2.37	2.14	20.18	24.69
PERCENT	9.6	8.7	81.7	100.00
EXPORTS	0.65	0.32	4.51	5.48
PERCENT	11.9	5.8	82.3	100.00
TOTAL	**3.02**	**2.46**	**22.69**	**30.17**
PERCENT	**10.0**	**8.2**	**81.8**	**100.00**

Source :- PNSC Report for the year 1993-94.

3.7 SHARE OF PNSC FLEET IN NATIONAL TRADE.

The share of dry cargo lifted by the national fleet is much less because PNSC does not own bulk carriers. The dry bulk commodities lifted by PNSC have to be on chartered vessels. The share of dry cargo lifted by PNSC's own vessels during 1992 -93 works out to be only 7.5 percent as indicated in table 24.

3.8 NTC SHARE IN LIQUID BULK TRADE

In the shipment of liquid bulk commodities NTC is so far handling the imports of crude oil. About half of this quantity is lifted by its tanker Johar, while the rest of the crude oil imports are lifted on the chartered vessels. The small quantity of crude oil exported by Pakistan and other liquid bulk commodities exported and imported by

Pakistan are lifted by foreign flag vessels. If all these shipments are taken into account the share of liquid bulk commodities lifted by NTC own tanker during 1992-93 amounts to 12.2 percent as is shown in table 25 below.

TABLE 24. PNSC SHARE IN NATIONAL TRADE - DRY CARGO.

(MILLION TONES)

SHIPS	LIFTINGS	PERCENTAGE SHARE
PNSC OWN	1.20	7.5
PNSC CHARTERED	2.17	13.5
PAN ISLAMIC	0.12	0.7
FOREIGN FLAG	12.62	78.3

Source:- PNSC Report for the year 1993-94

TABLE 25. NTC SHARE IN LIQUID BULK TRADE (1992-93)

COMMODITIES	NTC OWN	NTC CHARTERED	FOREIGN FLAG	TOTAL	NTC OWN SHIP SHARE
CRUDE OIL	1.71	2.29	0.45	4.45	38.4 %
PETROLEUM PRODUCTS	_	_	6.97	6.97	0.0%
EDIBLE OIL	_	_	1.47	1.47	0.0%
MOLASSES	_	_	1.01	1.01	0.0%
MISC. ITEMS	_	_	0.17	0.17	0.0%
TOTAL	**1.71**	**2.29**	**10.07**	**14.07**	**12.2%**

Source:- PNSC Report for the year 1993-94

3.9 FINANCIAL CONTRIBUTION OF NATIONAL FLEET TOWARDS NATION'S ECONOMY.

3.9.1 Profit and Loss Account of PNSC.

Besides the global, as well as a local economic recession, political developments and a number of other factors added to the poor performance of the PNSC. The year 1992-93 proved to be a very difficult year for PNSC. This trend will continue unless some positive steps are taken quickly. The profit and loss accounts for the year 1991-92 and 1992-93 showed a profit of 68.1 million rupees and a loss of 95.3 million rupees respectively as is shown in the table 26 below.

TABLE 26. PROFIT AND LOSS ACCOUNT OF PNSC FOR THE YEAR 1991-92 AND 1992-93.

(Million Rupees)

	1991-92	1992-93
REVENUE	4,062.9	3,134.1
FLEET EXPENSES	4,023.7	3,253.7
OPERATING PROFIT/ LOSS	39.1	(119.6)
OTHER INCOME	93.2	86.9
TOTAL PROFIT/ LOSS	132.3	(32.7)
OTHER EXPENSES	58.4	57.9
PROFIT/LOSS BEFORE TAXATION	73.9	(90.6)
TAXATION OVERSEAS	5.8	4.7
PROFIT / LOSS AFTER TAXATION	**68.1**	**(95.3)**

Source:- PNSC Report for the year 1993-94

But, from the economic point of view, shipping is a great source for earning or saving of foreign exchange which contributes towards the balance of payments as well as GNP and GDP by its gross earnings.

3.9.2 Earnings of PNSC

The gross earnings of National Fleet has shown a continuous increase since its inception in 1979-80. The gross earnings of the national fleet in 1992-93 decreased to 3,137 million rupees compared to 4,063 million rupees in 1991-92 which accounts for a 22.8% decrease. But it has shown an increase since 1985-86 by 48.8% and 22.11% in the year 1990-91. The factors which resulted in lower transport of tonnage and reduction in revenues during the year 1992-93 are the following:

(I). Withdrawal of the Right of First Refusal.

(II). Failure of the cotton crop.

(III) Drop in the import of vehicles in CKD condition.

(IV) PNSC not possessing proper container vessels to meet the demand of the containerisation trade.

(V) International restrictions on the use of ships more than 17 year old in European ports and some other regions

(VI) Old ships becoming outdated and not suitable for present day cargo liner services

(VII) Old ships requiring more expenditure and time for their repairs and maintenance which affect their operation schedules.

Gross earnings of the PNSC since its inception is shown in table 27.

According to PNSC sources, during the year 1993-94 the PNSC performed a total of 344 voyages (including foreign chartered vessels) and lifted 2.97 million tons of freight as against 389 voyages and 3.65 million tons of freight during 1992-93. The total revenue generated was Rs. 3,302 million as against 3,13 million rupees in the year 1992-93.

The sector wise break up of cargo lifting is as under(PNSC 1994, P. 5):

Asia Trade Sector	0.640 million freight tons.
Europe Trade Sector	0.370 million freight tons.
UAS/ Canada Trade Sector	0.184 million freight tons
Dry Bulk Cargo	1.775 million freight tons

TABLE 27. GROSS EARNINGS OF PNSC

(Million Rupees)

YEAR	NO. OF SHIPS	GROSS EARNING
1979-80	42	1,141.7
1980-81	45	1,507.5
1981-82	50	1,688.4
1982-83	43	1,639.2
1983-84	41	1,625.3
1984-85	34	2,418.6
1985-86	30	2,657.6
1986-87	29	2,209.7
1987-88	29	2,643.3
1988-89	29	3,788.0
1989-90	29	3,165.0
1990-91	27	3,865.0
1991-92	22	4,063.0
1992-93	22	3,137.0

Source:- Economic Survey of Pakistan 1993-94, Finance Division, Govt. Of Pakistan.

The number of containers lifted during the period was 15,222 TEUs as compared to 17,750 TEUs in the year 1992-93.

A reduction of about half a million tons in the dry bulk cargo was mainly due to the non-availability of Pakistani Steel cargo during the period. PNSC carried only 217,000 tons of Iron Ore, Coke and Coal in 1993-94 as compared to 1,426,000 tons in the year 1992-93. This is because Pakistani Steel, in the absence of the Right of First Refusal to PNSC at the time of awarding the contracts, had made alternate arrangements for the shipment of Iron Ore and Coke and coal. The carriage of the Pakistani Steel account will increase during 1994-95 as PNSC has been awarded the contract for affreightment of Iron Ore by Pakistani Steel,(PNSC 1994, P. 5).

On the other hand, there has been substantial improvement in the carriage of fertilizer and wheat on the government account.

The lifting of liner cargo has also declined by about 257,000 freight tons. This drop in the lifting of liner cargo is mainly due to:

- Lesser number of liner voyages due to ageing fleet. During 1993-94, 115 voyages were performed as against 144 voyages in 1992-93.
- Severe competition, coupled with practically no export of raw cotton which seriously affected PNSC liftings in the outward direction.
- Due to yellow cab scheme a large number of completely built vehicles (taxis, wagons, buses etc) were imported. This drastically reduced the production of local assembly plants. PNSC being the largest carrier of Knocked Down Cases(CKD) vehicles has been badly affected by this.
- Non-availability of fully containerised vessels has been another limiting factor in liner operations,(PNSC, 1994, P. 5).

During the year 1993-94, the PNSC had to discontinue the passenger service for Hajj and Umra to Jeddah as the special survey of the passenger vessel M.V. Shams has become due. The cost of repairs to the ship was very high. As it was found not feasible to repair the vessel, she had to be scraped. PNSC has been looking for alternate passenger ships to continue the passenger service but no suitable ship has

been found to be available. PNSC is also looking for a suitable ferry to run a passenger service between Karachi and Dubai.

To restructure its fleet, PNSC has planned a gradual disposal of its old tonnage. Vessels more than 20 years of age are in the process of being scrapped and acquisition of the following vessels is also planned.

- Five 1,200 / 1,500 TEU container ships
- One Bulk Carrier of 60 / 70,000 DWT
- One Bulk Carrier of 35 / 40,000 DWT
- One Edible Oil Tanker of 30,000 DWT

3.9.3 Contribution of National Shipping to the Nation's Balance of Payments.

The contribution of the national fleet to the balance of payments cannot be over emphasised. It enables a country to reduce the out flow of foreign exchange for imported shipping services and earns foreign exchange by selling shipping services to foreign countries. It is no coincidence therefore, that developing countries, see in maritime transport a prerequisite for their political and economic independence and thus are making considerable financial effort to establish their national fleet

Balance of payment may be defined as an account which includes a systematic recording of all the economic transactions made during a definite period of time (usually one year) between the resident of one territory and the residents of other territories. It is thus a double entry account of a country in which are shown all receipts of foreign earnings from the rest of the world on the credit side, and all payments to the rest of the world on the debit side.

The balance of payment is made up of three elements; the trade, the balance of invisible items and the balance of capital items. Simply, it is the difference between the total of visible items exported and those imported i.e. items that can actually be seen

passing through docks and airports. The invisible items are services rendered to foreigners or services received from foreigners. The chief invisibles are banking, shipping, insurance, air transport, tourism and income from foreign investment. To these can be added remittances home by workers, the cost of maintaining diplomatic posts and students abroad, brokerages and specialists fees etc. The balance of trade and the balance of invisibles together make up the "current account " of the balance of payment as a distinct from the capital account.

The problems arising from the balance of payments are a matter for the governments and treasury, which dictate policy, the importers and exporters can merely operate within the framework laid down. Basically, the only way for a country to eliminate a balance of payments deficit, is to increase its income and reduce its expenditure, that is, increase its export of goods and services and curtail its imports. More over, it must take whatever internal measures that are necessary to encourage the inflow of capital by maintaining economic stability and low interest rates.

The need to preserve a healthy balance of payments occupies an important place in every country's international trade policy. Accordingly, governments must adopt appropriate measures to achieve this objective. The technique usually employed may include import restrictions, exchange control and in some countries, the practices of flag discrimination and cargo preference are used.

It is frequently argued that the cost to the balance of payments of developing maritime nations for shipping services is equal to gross freights earned by the ships. To put it in another way, it is the opinion of non-maritime countries that by establishing a national merchant marine, their balance of payments will improve by the gross freights the national fleet will earn in foreign currencies. It is further believed that these earnings will be even greater when the ships operate in cross trades (on voyages between countries other than the ship's own port) where the gross freights are paid in foreign currency.

Pakistan's 98 percent of international trade (exports and imports) is carried by sea and the share of national fleet was only 10% in the year 1992-93. The contribution of the Pakistani merchant marine to the nation's balance of payments has remained in the negative figures. It may be observed from table 28, that the national shipping fleet's contribution to the balance of payments was projected to be a negative US$ 588 million in the year 1993-94 as compared to a negative US$ 880 million in the year 1992-93 which shows the decrease of 33.18%. In 1991-92 and 1990-91 this contribution was a negative US$ 709 Million and US$ 734 million respectively. The continuous increase in negative contributions to the balance of payments has been ongoing since 1986-87 when it was a negative US$ 499 million. (See table 28). Instead of seeing this negative contribution , it is rather considered to be an important source of foreign exchange as a saving, preventing the out flow of foreign exchange from the country if all of or even larger amount of the cargo was carried by foreign flags.

3.9.4 Contribution of Pakistan National Shipping Corporation Towards Country's GDP and GNP.

Besides shipping's contribution to the balance of payments, the other contribution of shipping is to the country's GDP and GNP. These two factors, by which the country's economic position is measured, are significant to be seen. All the countries particularly, the developing countries want to see in what extent their Gross Domestic Product and Gross National Product have shown growth in their economies.

Shipping is a national service which also contributes towards the nation's GNP and GDP. That is one of the reasons why the nations, particularly developing countries desire to develop their national merchant marine. The industry is a direct foreign exchange earner.

The contribution of the Pakistan National Shipping Corporation has been increasing since its inception, except in 1992-93. The share of national shipping in 1992-93 in GDP and GNP was 0.63 percent which shows a 21% decrease as compared to 0.84 percent in the year 1991-92 and in 1979-80 it was 0.68 percent. While the total contribution of Transport, Storage and Communications to GDP and GNP was 10.20 percent as compared to 9.82% in the year 1991-92 and 10.19% in the year 1987-88 which shows that the contribution has remained almost constant until 1992-93,(See table 29).

TABLE 28. CONTRIBUTION OF NATIONAL MERCHANT MARINE TO THE BALANCE OF PAYMENTS.

(US $ million)

Items	1984-85	1985-86	1986-87	1987-88	1988-89	1989-90	1990-91	1991-92	1992-93	1993-94 (Projected)
Trade Balance	-3552	-3042	-2294	-2557	-2573	-2485	-2483	-2236	-3267	-1504
Exports (f.o.b.)	2457	2942	3498	4362	4634	4926	5902	6762	6782	4866
Imports (f.o.b.)	-6009	-5984	-5792	-6919	-7207	-7411	-8385	-8998	-10049	-6370
Services (Net)	-815	-1016	-982	-1381	-1461	-1616	-1790	-2224	-2748	-1735
Receipts	941	963	1013	970	1018	1398	1630	1581	1628	1227
Payments	-1756	-1979	-1995	-2351	-2542	-3014	-3420	-3805	-4376	-2962
Shipment	(522)	(543)	(499)	(602)	(630)	(642)	(709)	(734)	(880)	(588)
Investment Income	(661)	(725)	(787)	(933)	(1013)	(1074)	(1242)	(1335)	(1569)	(1158)
Others	(573)	(683)	(709)	(816)	(899)	(1298)	(1467)	(1736)	(1927)	(1216)
Private Unrequired Transfers (net)	2687	2822	2557	2256	2100	2210	2102	3114	2327	1675
(Workers Remittances)	(2,446)	(2,595)	(2,279)	(2,013)	(1,897)	(1,942)	(1,848)	(1,468)	(1,562)	(1,071)
Current Account Balance	**-1680**	**-1236**	**-719**	**-1682**	**-1934**	**-1891**	**-2171**	**-1346**	**-3688**	**-1564**
Long Term Capital (Net)	834	1223	793	1299	1952	1671	1729	2541	2515	2036
Private Capital	306	474	286	431	390	466	510	1061	1384	1365
(net)	528	749	507	868	1562	1205	1219	1480	1131	671
Official Capital (net)										
Basic Balance	**-846**	**-13**	**74**	**-383**	**18**	**-220**	**-442**	**1195**	**-1173**	**472**

TABLE 29.1 CONTRIBUTION OF PAKISTAN NATIONAL SHIPPING CORPORATION TO THE COUNTRY'S GNP AND GDP.

(Rupees Million)

S.NO	SECTORS	1987-88	1988-89	1989-90	1990-91	1991-92	1992-93	1993-94 (Projected)
1.	Agriculture	99,108	105,917	109,127	114,542	125,425	118,802	121,932
2.	Mining & Quarrying	2,029	2,071	2,269	2,504	2,565	2,642	2,794
3.	Manufacturing	67,622	70,300	74,324	78,969	85,324	89,916	94,981
4.	Construction	16,563	16,937	17,466	18,462	19,566	20,701	21,467
5	Electricity and Gas	10,711	12,125	13,896	15,424	16,823	18,005	19,104
6	Transport, Storage and Communications	39,293	37,716	40,184	42,719	47,189	50,148	52,014
	(Share of PNSC)	2,643	3,788	3,165	3,865	4,063	3,137	(Jul-Dec) 1,412
7	Whole Sale & Retail Trade	63,932	67,305	69,655	73,380	78,760	81,016	83,146
8	Finance and Insurance	9,452	9,743	9,793	9,913	10,343	11,173	12,039
9	Ownership of Dwellers	20,829	21,928	23,086	24,305	25,588	26,939	28,361
10	Public Admin. & Defence	27,666	29,852	30,667	31,679	32,495	33,295	33,721
11	Services	28,212	30,054	32,017	34,108	36,335	38,708	41,236
12	**GDP (fc)**	**385,416**	**403,948**	**422,484**	**446,005**	**480,413**	**491,345**	**510,803**
13	Indirect Taxes	53,406	57,269	58,359	59,345	63,722	62,156	59,926
14	Subsidies	6,403	7,351	6,741	5,390	5,004	4,026	2,868
15	GDP (mp)	**432,419**	**453,866**	**474,102**	**499,960**	**539,131**	**549,475**	**567,861**
16	Net Factor Income From Aboard	17,100	14,933	17,163	9,457	4,949	5,601	5,156
17	GNP (fc)	**402.516**	**418.881**	**439.647**	**455.462**	**485.362**	**496.946**	**515.959**

TABLE 29.2 SECTORAL SHARE IN GDP (REAL)

SECTORS	1987-88	1988-89	1989-90	1990-91	1991-92	1992-93	1993-94
1. COMMODITY PRODUCING SECTORS	**50.9**	**51.3**	**51.4**	**51.5**	**52.0**	**50.9**	**51.0**
a. Agriculture	25.7	26.2	25.8	25.7	26.1	24.2	23.9
b. Manufacturing	17.6	17.4	17.6	17.7	17.8	18.3	18.6
c. Mining and Quarrying	0.5	0.5	0.5	0.6	0.5	0.5	0.5
d. Construction	4.3	4.2	4.1	4.1	4.1	4.2	4.2
e. Electricity & Gas Distribution	2.8	3.0	3.3	3.5	3.5	3.7	3.7
2. SERVICES SECTORS	**49.1**	**48.7**	**48.6**	**48.5**	**48.0**	**49.1**	**49.0**
a. Whole Sale and Retail Trade	16.6	16.7	16.5	16.5	16.4	16.5	16.3
b. Transport, Storage and Communications	10.2	9.3	9.5	9.6	9.8	10.2	10.2
(Share of National Shipping)	5.08	7.28	6.08	7.43	7.81	6.03	Jul-Dec2.7
c. Finance and Insurance	2.5	2.4	2.4	2.2	2.2	2.2	2.3
d. Ownership of Dwellings	5.4	5.4	5.5	5.4	5.3	5.5	5.5
e. Public Administration and Defence	7.2	7.4	7.3	7.1	6.8	6.8	6.6
f. Services	7.3	7.4	7.6	7.6	7.6	7.8	8.1

CHAPTER 4

ROLE OF TRAINED HUMAN RESOURCES IN SHIPPING AND A COUNTRY'S ECONOMY.

4.1 HUMAN ELEMENT IN SHIPPING.

Maritime adventure began with the primitive man who floated about on the surface of the water with the help of a wood log and subsequent to getting over the fear of water, established a maritime trade. Today we have sophisticated vessels fitted with electronic aids to safely traverse the wide expanse of seas and oceans. From a small sailing craft to an Ultra Large Crude Carrier, it has been a remarkable stride that people connected with maritime trade have made.

With an ordinary staff of about a metre in length with a sliding vane the primitive navigator obtained the latitude of the vessel's position from the Pole Star in the Northern Hemisphere and fom the Southern Cross in the Southern Hemisphere, within an error of a few miles. Today the Global Positioning System with the flick of a switch gives the modern navigator his vessel's position with an accuracy of a metre or so. The far sighted vision of inventive man has made the navigation so much safer.

Now the oceans and the seas are neither safe nor clean. The ships have become very large; they carry cargoes of various hazards; the oceans and the seas have become congested with heavy traffic of all types of vessels; the port approaches have become unmanageable with ships of various flags due to a communications gap.

There are more than 50,000 vessels above 200 NRT all over the world engaged in shipping activity of which 2 ships per day run a ground. Realising the damage any

grounding could cause to the environment, one cannot sit idle and forget such incidents. Then the following questions arise:
what would be the cause for such casualties? Is it over work, undue tension or complacency?(Nautical Institute, Pakistan Branch, 1994, p. 71).

This brings the author to the universally acclaimed term "SEAMANSHIP". Whoever coined this term had the wisdom of the ages of combining the three elements which go to make a maritime trade and success, the sea, the man and the ship. Even in coining the term, how thoughtfully he has placed the words, SEA, MAN and SHIP! Between the sea and ship, he thought it necessary to place the word man who would at all times be in the control of the situation by observing the sea and watching the behaviour of his ship and taking the necessary steps to make the voyages safe and home-coming rewarding.

When you think of the Sea Trade, remember this everlasting term Seamanship. But who is this man? Is he the man in search of an adventure; is he the man in search of sustenance for himself and his dependants; is he the man fired by the love of a sea profession and in search of an identity for his calling as an unseen link between the continents to ferry the merchandise to meet the human needs; an unseen link between human societies spread all over the world to transport healthy thoughts, workable language and acceptable culture? He is the man; he needs to be cared for; he needs to be thought of.

Human error is the cause of neglect; neglect on the part of those who own the ships; neglect on the part of those who man the ships. Owners who own the ships must tend to the needs of the ships repairwise, maintenancewise and managementwise.

Men who man the ships must tend to the needs of the ships in heavy weather, in heavy traffic and in making the people on board the ships a close-knit team. Then there is no room for complacency.

With all the sophisticated electronic aids at the disposal of the seafarers, they should not lose sight of the primitive sense of seamanship, navigation and improvisation. Also it is very important to utilise the five senses with which the human beings are blessed. For the navigators, the five Ls remind them of the safety factor.

LOOK-OUT: for visible danger; for change in colour of the sea water; for cloud formation; for wind direction; for direction of swell; for sea state.

LOG: for checking the distance traversed by the ship to ascertain the proximity of danger.

LATITUDE: for comparing the approximate position, without much time lost in calculation.

LEAD: for fathoming the actual depth of water under the keel to ensure the safety of the vessel in shallow waters for safe navigation.

LOVE: for taking frequent sights and bearings of shore objects in areas of hidden dangers and in close proximity to land.

And for everybody on board the ship, including the navigators, the five senses are as much important.

HEARING: to ascertain the cause of strange sound.

SMELLING: to make sure of the cause of odd smell.

SEEING: to check the cause of peculiar behaviour of the vessel or machinery.

TASTING: to verify the cause of unnatural taste.

FEELING: to confirm the cause of abnormal temperature.

If any of the above signs are noticed, one should not delay inquiry of such abnormal phenomenon. Then and there the causes need to be found out and the situation rectified. A stitch in time saves nine. This way, many a heart rending tragedy could be averted. Then there is no room for complacency.

The sinking of the TITANIC was an example of complacency in view of the chances of icebergs in the sea when the ship did not reduce her speed to a safer one. Then the people on board the vessel in the vicinity seeing the distress flares took them as passengers celebrating the success of the maiden voyage to New York. If they had taken the trouble to inquire into the cause of incessant firing of the flares and advanced to the site of the disaster, so much loss of life would not have taken place. If the distress massage had not been picked up by other ships, the loss of life and the damage to property would probably have been even more significant.

The collision between the Stockholm and the Andrea Doria, the passenger liners, the best in every respect- manningwise, equipmentwise, and machinerywise, would not have taken place if due attention was paid to the weather reports which indicated the presence of fog patches. The Estonia would not have seen the bed of the sea if the weather reports were given due attention and the speed reduced.

The troopship "EMPIRE WINDRUSH" completely gutted out in the Mediterranean also indicates the absence of vigilance which is the basic factor that makes the success of any Passenger Liner Trade. But it is remarkable on the part of the ship's complement that not a single life was lost even though the ship was at total loss.

The tragedies of the Exxan Valdez, the Herald of Free Enterprise, the Scandinavian Star and Brera point out to the need for strict vigilance and good operational management because all these accidents occurred due to operational error on board the vessel.

4.2 IMO's RESPONSE TO THE HUMAN ERROR

One point that every study of shipping casualties agrees on is that the majority of casualties are influenced by human error.

A study carried by the Institute of Shipping Economics in Bremen, Germany, looked at 330 merchant ship accidents, involving 481 ships, that occurred between 1987 and 1991. It concluded that 75% of them were due to two factors: too heavy workload being put on the crew, especially in port, and inadequate training.

An analysis of the major claims between 1987 and 1991, carried out by the United Kingdom Protection and Indemnity Club showed that 60% were due to human error. It was responsible for 50% of the cargo claims, 50% of pollution claims, 65% of those for personal injury claims, 80% of property damage claims and 90% of all collision claims. The 1,444 claims analysed totalled US $ 778 million.

A survey by the Advisory Committee on Pollution of the Sea found that of 182 oil spills in UK waters in 1990 showed that the human error was responsible for 66%

The Australian Department of Transport and Communications reported in 1992 that almost 75% of the accidents it had investigated were caused by human error. Mechanical or structural failures were blamed for the remainder.

Although the percentage varies, these and other studies show quite clearly that the vast majority of maritime causalities are caused by mistakes that could have been avoided.

It follows that any attempt to reduce accidents at sea should concentrate on eliminating human error, since this is where the problem is greatest and where the biggest improvements can be made. This effort must be shared by every one involved in shipping including IMO.

The primary task of IMO is to develop and adopt regulations to improve the safety of international shipping and to prevent pollution from ships. The organisation consists of 153 countries, including virtually every maritime nation in the world and since meeting for the first time in 1959 it has adopted more than 40 conventions, protocols and other treaties and several hundred codes and recommendations.

The conventions and other treaties are mandatory, that is, they are binding on all countries which ratify or accede to them. They are made mandatory because, by accepting them, individual countries agree to incorporate them in their national legislation and apply them as any other law of the country.

Many of these conventions have been accepted by so many countries that today it is virtually impossible to build or run a ship that is not subject to IMO regulations as to construct, equipment or operations.

The reason why the IMO standards have found so much support is that they are developed and adopted on a consensus basis. All maritime nations are invited to attend key meetings and all can contribute to the discussions and decisions that result. The subjects under consideration are often basically technical and are not greatly influenced by political, economic or other divisive factors. The IMO member states have also shown a willingness to discuss issues until a compromise acceptable to all has been achieved rather than push through a vote that ends up alienating a substantial majority of the shipping community.

The outcome is that the most important IMO conventions have now been accepted by so many countries that they apply to virtually every ship in the world. Even ships that fly the flags of countries that have not ratified a particular convention often conform to its requirements because many countries refuse to admit ships which do not meet convention standards.

4.2.1 Main IMO Safety Conventions

The table below shows the main IMO safety and environmental conventions, how many countries have accepted them and what percentage of the world fleet, in tonnage terms, is covered.

CONVENTION	RATIFICATION	% OF TONNAGE COVERED
1. International Convention on Load Lines, 1966.	134	98.02
2. International Convention for the Safety of Life at Sea (SOLAS) 1974.	125	97.11
3. International Convention on Tonnage Measurement of Ships, 1969	104	96.11
4. International Regulations for Preventing Collisions at Sea (COLREG), 1972	123	95.81
5. International Convention on Standards of Training, Certification and Watchkeeping for Seafarers (STCW), 1978	103	92.79

6. International Convention for the Prevention of Pollution from Ships 1973, as modified by the Protocol of 1978 relating thereto (MARPOL 73/78)	85	92.01

It can be seen that IMO has been very successful in adopting regulations. Most conventions also consist of procedures which enable them to be amended relatively quickly and easily, thereby enabling the International Maritime Organisation to keep regulations up to date. The SOLAS Convention, for example, has been modified so many times since its enactment in 1980. The latest amendments were made in May 1984.

Since a majority of countries have ratified or acceded to them, accidents and serious causality records should be reduced in all shipping countries. In fact statistics show that casualty rates between countries vary enormously. Ships flying the flag of the country with the worst record of casualties are more than 100 times more likely to have a serious accident than the ships flying the flag of the country with the best record. These differences can only be caused by the way in which the conventions are implemented and the implementation is the responsibility of Governments.

4.2.2 The Role of Governments

When any Government accepts an IMO convention it makes that convention a part of its national law and agrees to enforce it in its entirety. Enforcement, however, involves far more than a signature on an impressive piece of paper. A country wishing to have a fleet of ships under its flag must have properly trained personnel to run the administration effectively. It must employ a professionally well trained team of surveyors and inspectors to ensure that its ships comply with national and

international requirements. This costs money and also requires expertise - the sort of expertise that can only be acquired by decades, rather than years, of experience.

All this makes it difficult for developing countries, with few resources and little maritime background, to establish competitive fleets. There is a continual temptation to cut back on some of the expenses involved in operating ships and this can some times lead to savings being made at the expense of safety. The cut back may be in developing countries, but it is the developed countries who flag out who benefit from the lower crew costs.

IMO recognizes this problem and is trying to deal with it in various ways. One is by trying to improve the performance of flag states. A special Sub-Committee on Flag State Implementation has been established to deal specifically with this issue.

The IMO Technical Co-operation Programme has been operating since the 1960s and gives advice and other forms of assistance to governments wishing to improve their shipping operations.

Of particular importance to implementation was the establishment in 1983 of the World Maritime University in Malmo, Sweden. The University provides intensive training for men and women who, often after a period at sea, have taken up a career in shipping administration, company management, or maritime education, port management and environment protection, but whose progress is limited by the lack of training in their own countries. The university enables this deficiency to be overcome and because of the prominence given to IMO standards, helps to ensure that safety and pollution prevention are given their due priority.

Port State control has been strengthened and many IMO conventions give Contracting Parties the right to inspect foreign ships visiting their ports to see if they

conform to IMO requirements. IMO has encouraged the establishment of regional port state control systems which enables resources to be better utilized than would be the case in purely national systems.

But while the governments are responsible to implement IMO conventions, the responsibility of shipping companies for managing and operating the world fleet should not be underestimated. Shipowners and managers are much closer to their ships than governments. They know the conditions of their ships, the quality of the equipment installed on those ships and the competence of the crews who operate them. If the standards are low it is because the ship owners and managers have not done their jobs properly.

4.2.3 The Role of Management

Shipping Companies are in business to make a profit. This motive involves maximizing revenues and minimizing costs. In times of economic prosperity the later is not quite so important as it is in times of hardship, but when the recession has lasted for several years and shows little sign of coming to an end, many shipowners are having to cut costs back to the bone. This has had the following results:

- Ships today are much older that they were in the boom years in the early 1970s, because the owners cannot afford the high costs of replacing them (today freight rates are so low that often they do not even cover the costs of building a new ship, let alone to operating expenses).
- Owners frequently register their ships under a flag which offers low or non- existent taxation and permits greater flexibility in crew selection.
- Crews are increasingly being selected from low wage countries in preference to the traditional sources where labour costs are much higher.

None of this is, in itself, bound to lead to lower maritime standards. Old ships are statistically more likely to have accidents than new ones, but not if they are properly maintained and there is no inherent reason why seafarers from one country should be worse than those of elsewhere.

Yet the indications are that the safety and environment standards in some of the fleets which are increasing in size most quickly are lower than in the traditional shipping nations whose fleets, generally speaking, have declined steadily over the last decade. There are also indications that low standards- meaning the Government inspections and other checks are seen as a bonus by some owners when deciding where to register their ships.

Bad management, however, is a problem everywhere. The inquiry into one accident involving a European ferry which capsized with heavy loss of life said that, "from top to bottom the body corporate was infected with the disease of sloppiness" while the inquiry into a major oil spill in North America referred to the failure of the shipowner "to provide the fit master and the rested and sufficient crew"

A report by the United Kingdom P&I club, which provides insurance cover for around 25% of the world's deep water fleet, said," Many shipping companies do not provide masters with formal guidance as to how the ship should be run, there being no policy statement laying down standards for such matters as maintenance, training, safety or health and welfare."

In November 1980 IMO responded to the problem of poor management standards by adopting, as a recommendation, the International Safety Management (ISM) code, which establishes specific procedures for shipping companies. In May 1994 SOLAS was amended to make the code mandatory by including a new chapter IX; Management of the Safe Operation of Ships.

The code establishes safety management objectives which are:

* to provide for safe practice in ship operation and safe working environment;
* to establish safeguards against all identified risks;
* and to continuously improve safety management skills of personnel, including preparing for emergencies.

The code requires the safety management system (SMS) to be established by "the company", which is defined as a shipowner or any person, such as the management or bareboat charter, who has assumed responsibility for operating the ship. This system should be designed to ensure compliance with all mandatory regulations and that codes, guidelines and standards recommended by IMO and others are taken into account.

The SMS in turn should include the following number of functional requirements:

* a safety and environmental protection policy;
* instructions and procedures to ensure safety and environmental protection;
* defined levels of authority and lines of communication between and amongst shore and shipboard personnel;
* procedures for reporting accidents etc.;
* procedures for responding to emergencies;
* and procedures for internal audits and management review.

The company is then required to establish and implement the policy for achieving these objectives. This includes providing the necessary resources and shore based support and making sure that someone is directly responsible. Every company is expected "to designate a person or persons ashore having direct access to the highest level of management."

The code goes on to outline the responsibility and authority of the master of the ship. It states that the SMS should make it clear that " the master has the overriding authority and the responsibility to make decisions about the safe management and operation of the ship". The code then deals with other sea going personnel and emphasises the importance of the training.

The companies are required to prepare plans and instructions for key shipboard operations and to make preparations for dealing with any emergencies which might arise. The procedures required by the Code should be documented and compiled in a Safety Management Manual, a copy of which should be kept on board.

After outlining the responsibilities of the company, the code then stresses that the responsibility for compliance rests with the Government. Companies which meet the standards should be issued with a document of compliance, which should be kept on board. Administrations should also issue a Safety Management Certificate to indicate that the company operates in accordance with the SMS and periodic checks should be carried out to verify that the ship's SMS is functioning properly.

The code is expected to enter into force under tacit acceptance on 1 July 1998. It will apply to passenger ships, tankers, bulk carriers, gas carriers and some cargo high speed craft not later than that date and to other cargo ships and mobile drilling units of 500 gross tonnage and above not later than 1 July 2002.

The ISM Code is important because it stresses management's responsibilities for safety and spells out in considerable detail of what that responsibility consists. In the past some companies have given the impression that the responsibility for safety of the ship rests with the captain while the directors' functions have been limited to the more interesting task of making a profit.

The Code also makes it clear that the " Human Element" a phrase which has usually been interpreted as meaning the seafarers alone - also applies to those on shore. When an accident happens, the subsequent investigation often shows that the mistakes have been made not only by those on board but also by the company operating the ship. The adoption of the code as a mandatory instrument should enable some of those mistakes to be eliminated, and enable those responsible for making them to be held more accountable for their actions than they have been up until now.

4.2.4 The Role of the Seafarer

The seafarer's role in maritime safety and pollution prevention is unique. He is closer to the problem than anyone else involved and all too often his views are ignored. Yet when something goes wrong it is always he who suffers the consequences first.

Seafaring is in many ways a traditional occupation. A seaman on a bulk carrier in a gale in the middle of the Pacific experiences dangers very similar to those faced by the sailors who crossed the ocean in sailing ships four hundred years ago. But despite these similarities, shipping has changed more in the last twenty years than in any similar period in history and the changes that will take place in the next two decades could be even greater. These changes have considerable implications for shipping safety and the environment. In this connection the following four factors need to be considered.

1. The trend towards smaller crews

Now the general trend of management is towards the smaller crew. Twenty years ago the average cargo ship or tanker might have a crew of between 40 and 50 except USA. Today the average ship could well be operating with fewer than 20 people on board. The rest have been replaced due to new technology and different working

patterns. Many countries are already experimenting with ships operating with only one officer on the bridge at night.

Some have taken these trends to forecast a time when the seas are traversed regularly by robot ships controlled, through computers and satellite communications, either by a mother ship or even from thousands of miles away on shore. This certainly lies in the distant future. Until then, ships will still have to have somebody on board. The question is , how many?

Regulation 13 of Chapter V of SOLAS requires the contracting Governments to ensure that "from the point of view of safety of life at sea, all ships shall be sufficiently and efficiently manned." Requirements for the minimum safe manning considered necessary by the flag State administration are provided in a document carried on board, but the government itself has discretion to decide what the crew level should be.

A study into Crew Size and Maritime Safety, carried out by the National Research Council of the United States and published in 1990, found it difficult to assess the impact of crew size upon casualties because of the lack of data. Opinions on the matter tended to reflect the concerns of the organisations consulted; the unions said that smaller crews had reduced safety while ship operators said safety had improved.

But, they did agree that emergencies have implications as far as the crew size is concerned. A fire, explosion, collision or grounding would require all hands to respond, and there has to be enough of them to make response effective. Total loss of power could also have disastrous consequences, since much of the equipment used to replace crew members is power assisted. The effect of personnel casualties also had to be taken into account. The report said that rescues at sea involve at least six people in

in addition to those left on board to operate the ship and any reduction in crew size would have to take that factor into account.

The report also referred to another problem, that of maintenance, much of which traditionally has been carried out by shipboard personnel while the ship is at sea, but which would have to be arranged in a different way if crew sizes shrink.

2. Ageing ships and poor maintenance

Statistics issued by the Institute of London Underwriters in the year 1994 pointed particularly to the increase in machinery related incidents. These caused 42 total losses in 1990, rising to 60 in 1991, 76 in 1992 and 47 in the first six months of 1993. The London based Salvage Association said that machinery casualties in 1991 accounted for 45-50 percent of all claims and expressed deep concern about crew negligence and lack of maintenance.

The chief surveyor of the Association was quoted in early 1994 as blaming this decline on owners carrying out the "absolute minimum maintenance and repairs to their vessels" and, "a decline in expertise and experience among crews is spreading to the superintendents and others who attend on behalf of owners."

The trend towards smaller crews has certainly aggravated this problem by making it virtually impossible to carry out a planned programme of maintenance during the course of the voyage, the remaining crew members have no spare time to devote to such tasks.

Another contributory factor is age. In 1993 the average age of the 80,655 ships in the world fleet was 18 years, according to statistics issued by Lloyd's Register of Shipping. There is no automatic correlation between age and poor safety standards,

but there is no doubt that old ships do have more accidents than young ones. It is a fact that the freight rates now being offered are making it almost impossible to buy new ships and operate them at a profit.

The UK P& I Club found that structural, mechanical and equipment failure was highest on ships in the 10-14 year age group, the period when age related breakdowns begin to become significant. Crew mistakes were also highest on ships in this group but the Club said many of them could have been avoided if the ships had been properly maintained.

3. Social factor and fatigue

Seafaring has probably always been a tiring occupation. But the changes that have taken place in shipping in recent years have done little to make the job any easier. A survey carried out by the Bremen Institute of Shipping Economics and Logistic (ISL) involving 400 officers showed that around 40% found their work load "too taxing" or "absolutely overtaxing".

However, considerable research into fatigue has been carried out recently and it has shown that fatigue involves a great deal more than long hours and too much overtime. In November 1993 IMO adopted resolution A. 772 (18) on Fatigue Factors in Manning and Safety which states that "fatigue may be induced by factors such as prolonged periods of mental and physical activity, inadequate rest, adverse environmental factors, and stress or other psychological factors."

The resolution goes on to say that,"in the other case of seafarers, among the most commonly recognised and documented causes of fatigue are poor quality of rest, excessive workload, noise and interpersonal relationships."

The resolution, however, recognises that there are multiple causes and that the whole question of fatigue is extremely complex. The technical advances that have been made in the equipment field, for example, have undoubtedly contributed to safety, but they have also tended to make seafaring more boring.

In an article in the BIMCO Bulletin, Martin Dyer Smith, principle lecturer in Human Resource Management at the University of Northumbria in the United Kingdom quotes a shipping company executive as saying, "We need to recruit well qualified junior officers to replace our ageing cadre of senior officers. The type of people we need are unlikely to be challenged by eight hours of staring at the horizon for twenty or thirty days on end." If the ship is operating on automatic pilot and its position is fixed by satellite the job is likely to be even more tedious.

Social problems can also occur. On the ship with the crew of 40 or more it was usually possible to find congenial companions. That is not so easy when the crew is down to 15. Smaller crews have tended to break down the social barriers and demarcations such as separate messes for officers and ratings. But the equality is at the expense of the officers who traditionally had extra privileges and now find themselves rubbing shoulders socially with those to whom they have to give orders. Some welcome this outbreak of egalitarianism. Others simply feel that in the march of progress they have lost out.

The tedium of life on board the ship can no longer always be made up for when the ship reaches the port. Thirty years ago a traditional dry cargo ship going to Europe on a typical voyage would spend several days loading and unloading the cargo in Antwerp before going on to Rotterdam, Amsterdam and Hamburg and doing the same thing. During this period the crew would have time off to go ashore and unwind. Many companies would use this period also to allow the crews to go home on leave while a relief crew took over for the turn-around period.

Tday, many dry cargoes are containerised. Container terminals are not located near the centre of the port, as the traditional berths were, but miles down river on a specially developed site. There is nothing much to go ashore for - and no time to go anyway, since one of the major reasons for containerisation is to reduce the time a ship spends in port. A modern container ship is likely to be on its way again with a few hours of arrival, not a few days, and one of the pleasures of seafaring, a chance to see foreign places has thereby been reduced.

It is not coincidence that fatigue, whatever its causes, is at its worst at night. The UK P & I Club analysis of major claims for 1992 said that the majority of major collisions occurred between the hours of four and eight in the morning, often just before dawn.

IMO's resolution A: 772 (18) on Fatigue Factors in Manning and Safety discusses the causes of fatigue and its consequences at some length and divides them into four main groups:

- Management ashore and aboard ship and responsibilities of administration-
- Ship-specific factors
- Crew specific factors
- External environmental factors.

In the general discussion which concludes the resolution , many of the issues raised so far are referred to. Some can be corrected by better management policies by governments. Improvement to the design and equipment of ships could no doubt reduce or eliminate many accidents.

4. Multi-national crews.

Multinational crews have become more common for a number of reasons. The most important is probably the cost. The International Shipping Federation report for the year 1993-1994 shows comparative costs for various nationalities. While a Japanese chief officer will cost 149 units, an Indian will cost 45 and a Chinese officer only 28. An American able seaman will cost 186 units , a Filipino 38 and a Bulgarian 33.

These huge differences have had a tremendous effect on shipping and are one reason why open registers have grown in importance. They allow ship operators to select crews from any nationality and the seafarer who asks for the smallest salary obviously has the competitive edge over his rivals.

Multi-national crews have also become more common because of the growing unpopularity of seafaring as a profession in many of the traditional maritime countries. The lack of job opportunities and uncertainty about long term career prospects have had an impact while shore jobs offering high wages, social benefits, long holidays and restricted working hours must seem highly attractive to a seafarer who has seen the attractions of his own job dwindle over the years. As the shipping newspaper Lloyd's List put it in an editorial in November 1993, "Who ashore in the last days of the 20th century would be prepared to work a 12-14 hour day with broken sleep patterns for a whole unremitting year?"

An analysis of shipping casualties published by Japan Maritime Research Institute (JAMRI) in December 1993 said that the Japanese shipping industry has become short of well qualified Japanese seafarers because the number of experienced, older men had been reduced and their younger replacements lacked experience. Because of difficulties in finding qualified Japanese seamen, the industry was turning to foreigners.

However, the JAMRI report showed that the casualties occur more often on mixed crew vessels including Japanese seamen than on ships manned solely by Japanese and there have been examples from other countries where accidents have been caused or their effects worsened by such obvious problems as the crew being unable to communicate with each other or with passengers because of lack of a common language.

There is, however, far more to it than being able to speak to each other. Different nationalities have different cultural and often religious traditions which also present complications.

The use of multi-national crews can, unless handled with great sensitivity, exacerbate another trend of recent years - the weakening of company loyalty. The days have virtually ended when a young man wishing to pursue a career at sea would join one company, receive training at its own facilities, gain sea-going experience on the company ships and then work his way steadily up the chain of command before finally going ashore to take up a supervisory position with the same company.

Although all these factors are important, the ability to communicate is still probably the most important, especially when some thing goes wrong because, as professor David H. Moreby, of Institute of Marine Studies at the University of Plymouth, United Kingdom has pointed out, " People panic in their own language."

English is widely accepted as the language of the sea and the knowledge of English is required of deck officers and the master by the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers (STCW) 1978. But it is not required for the engineering department nor of ratings.

There is general agreement that a common language of the sea is now urgently required and the language used should be English. IMO has already adopted a Standard marine Navigational Vocabulary to improve communications between ship and shore. It is now extending this to cover other safety communications as well as those used on board ship as well.

Apart from being able to give or receive orders and to understand what is happening in a crisis, seafarers need a common language for social purposes. The Salvage Association has highlighted the case of a ship with a crew of 11 belonging to seven nationalities, an almost certain guarantee for loneliness, isolation and stress, it would seem.

In an average year, The mission to Seamen make 57,000 ship visits in more than 300 ports world-wide. In the process it has probably gained a unique insight into conditions in the shipping industry today.

4.2.5 Tackling the Problem

The above discussion has attempted to show that the human error is caused by many factors and that many of them could be avoided. Improvements can be made to the design of the ships, such as making equipment easier to operate and more accident proof, or by designing it in such a way that it is less tiring to use.

But probably more attention needs to be paid to the men and women who work in the shipping industry and especially the seafarers who operate the world's ships. In tackling the problem the author is of the opinion that the following points need more concentration.

1. Standards, training and certification.

Generally speaking, the shipping community agrees that the regulations adopted by IMO are acceptable. The consensus approach, the fact that the shipowners, seafarers, environmental groups and others are all able to participate in discussions as well as Governments, means that virtually the whole maritime community is able to participate in the regulatory process. The table made before in this chapter shows how widely recognised IMO's key conventions are.

There is less confidence in the way the conventions are implemented. The flag State is responsible not only for guaranteeing the seaworthiness of ships on its register but also authorising certificates of competency, supervising maritime training institutions and their standards and recognising the certificates issued by foreign Governments. Statistical evidence reveals the enormous differences in the casualty rates of various countries. There is no reason to believe that the administrations which fail to guarantee the quality of their ships are any more successful in checking the competence of the seafarers who operate the ships.

It is worth stressing that it is IMO's function to develop and adopt the international agreements that are intended to improve maritime safety and prevent pollution from ships. It is the responsibility of the Governments to ensure that national legislation implements properly and is enforced on ships flying their flag.

2. Operational requirements

An important step has been taken towards ensuring that implementation is more effective in the future than it has been in the past. It was taken in May 1994 when the SOLAS Convention was amended to enable port State control officers to check on operational requirements, in other words, the ability of crew to carry out their duties.

A new chapter XI has been added to the convention, Regulation 4 of which makes it possible for port State control officers to check operational requirements when there are clear grounds for believing that the master or crew are not familiar with essential shipboard procedures relating to the safety of ships. The new chapter is expected to enter into force under the tacit acceptance procedure on 1 January 1996.

Reference is made to the procedures contained in the annex to resolution A. 742 (18), which was adopted by the IMO Assembly in November, 1993. The resolution refers to a number of earlier resolutions dealing with control procedures, management responsibilities and principles of safe manning, but notes that none of these explicitly deals with the influence of the human element on maritime safety or pollution prevention.

It acknowledges the needs for port states to be able to, monitor not only the way in which ships comply with the IMO standards, but also to be able to assess, "the ability of the ships' crews in respect of operational requirements relevant to their duties, especially with regard to passenger ships and ships which may present a special hazard."

The resolution agrees that, where there are clear grounds for believing that a ship's officers and crew are not familiar with essential shipboard procedures, then the port state control should be extended to include operational requirements.

The "clear grounds" referred to are defined in the annex to the resolution. They include such factors as operational shortcomings, cargo operations not being conducted properly, the involvement of the ship in the incidents caused by operational mistakes, absence of an up-to-date muster list and indications that crew members may not be able to communicate with each other.

The procedures refer to control procedures in three IMO Conventions. They are regulation 19 of chapter 1 of SOLAS; article 5 and 6 of the International Convention for the Prevention of Pollution from Ships, 1973 as modified by the protocol of 1978 relating thereto (MARPOL 73/78) and article X of the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers (STCW), 1978.

The procedures say that accidents involving passenger ships and ships carrying harmful substances have highlighted the need for good operational standards. These are primarily the responsibility of flag States, but the introduction to the procedures observes, " it may be difficult for some administrations to exercise full and continuous control of ships entitled to fly their flag under certain circumstances, such as the cargo the ship carries and the familiarity of the crew with the ship, which can change completely between two successive flag state inspections and the fact that some ships do not regularly call at flag states' national ports."

Port state control inspections are normally limited to checking certificates and documents. The introduction says that if certificates are not valid or if there are clear grounds for believing that the condition of the ship, its equipment, or its crew does not substantially meet the requirements of a relevant instrument, a more detailed inspection may be carried out.

The annex then goes on to give guidelines on how to carry out control of operational requirements under the three conventions. It is not intended that all operational procedures would be checked during one single inspection.

The operations and procedures selected for special attention include ascertaining that the crew members are aware of their duties as included in the muster list; communications, fire and abandon ship drills, familiarity with the ship's damage

control and fire control plans, bridge, cargo and machinery operations, and ability to understand manuals and other instructions. The guidelines then cover operational requirements relating to anti-pollution activities. Detailed guidance on how these factors should be assessed is given in an appendix.

After making the assessment, the surveyor then has to make a professional judgment to determine whether the operational proficiency of the crew is sufficient to enable the ship to sail or whether" a better level of proficiency should be required." The procedures for detaining the ship if this is judged to be necessary are given in resolution A. 481 (XII).

3. Extending regional port state control

Although the Port State control provisions contained in IMO conventions were originally included as a back-up to Flag State control, concern about declining or ineffective Flag State implementation has led to greater attention being paid to Port State control as a means of ensuring that IMO standards are implemented.

As we have just seen, operational requirements will be covered by 1996, but IMO is also encouraging the extension of regional port state control systems which enable Governments to pool scarce resources and ensure that as many ships as possible are inspected.

The first regional port state control system was established in Europe in 1982 by means of Paris Memorandum of Understanding on Port State control. The number of countries that have signed the Memorandum has now grown to 16 (including Canada).

In December 1992 a number of countries in Latin American and the Caribbean signed a regional port State control agreement and other systems have been established or discussed in Asia and the Pacific and the Caribbean.

All of the above measures should help to make the implementation of IMO measures more effective and thereby help to reduce accidents and pollution from ships.

But, it is generally agreed that the most important contribution to the improvement of international shipping safety is the revision of the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers 1978.

4. The STCW Convention

The STCW Convention is generally regarded as second in importance only to the SOLAS Convention as far as maritime safety is concerned. It is the only the international treaty that deals with the training, certification and watchkeeping of seafarers and forms the basis of national standards all over the world. Its purpose was to raise standards to a basic minimum level and since, as the table on page 73 shows, it has by now been ratified by 103 countries whose combined merchant fleets represent 92.79% of world tonnage. It can be claimed that the Convention has been successful.

However, it has a number of defects. The Convention was, even when adopted, regarded as a compromise between those nations wanting very high standards and those who were concerned about their ability to implement such measures. As a result many measures were adopted by the 1978 conference as recommendations rather than as mandatory regulations within the Convention itself.

A second factor is that the Convention was adopted 17 years ago and updating was needed urgently. It was originally proposed that the convention should be revised by means of a pains-taking procedure that would have taken many years to complete. The Secretary General, Mr. William A. O'Neil, felt that this was too long to wait and suggested in 1993 that the proposed schedule be replaced by a greatly expedited procedure.

The MSC agreed to this proposal and it is now revised and adopted at a conference held in June-July 1995.

The existing treaty has been completely restructured and in its place has been assembled a "compliance" system which will hopefully make sure that all countries while training and certifying seafarers take their responsibilities very seriously.

No longer will Governments be able to shelter behind vague phrases about such and such "being to the satisfaction of the administration." Instead, on the matter of training and certificates, they will be required to submit for the approval of an IMO expert team full details of their compliance procedures, the means and methods of training, the procedures of issuing the certificates of competency and other important proofs of their system. If the experts approve, then the country's systems will be given the IMO "seal of approval" and other countries will accept their certificates and seafarers' qualifications. There will be no " blacklist" as such, rather the opposite, with the IMO becoming the guarantor of its members' performance.

This is really quite significant as the IMO, for the very first time, is given teeth and will be able to react to any governments who cheat or remain ineffective, by refusing to approve their certificates. There is also a provision for the continuing monitoring of standards by a quality assurance system, so there will be no chance of a government getting its systems approved, then quietly permitting standards to slip.

The Convention is now divided into two sections, one section containing compulsory provisions, the other recommendations. A separate Code of Practice covers the technical provisions. And, provided the IMO Assembly approves the decisions of the conference this October, the revised document will enter into force on 1 February 1997, although seafarers who begin their training before 1 August 1998 will be able to qualify in accordance with the original convention.

But what this will mean for seafarers? Will it mean more bureaucracy as original certificates have to be approved by the governments of the flags their ships are flying? It could mean some very different training, with provisions for compulsory use of simulators, and special training for seafarers sailing on ro-ro ferries that takes into account the characteristics of these vulnerable ships and the need to take charge of passengers in an emergency.

It will certainly mean that certificate examinations are changed, with the seafarers being asked not to demonstrate his or her knowledge by the a theoretical examination paper, but required to pass an assessment based on a demonstration of actual proficiency in a particular task. The seafarers will still have to demonstrate academic knowledge, but also skill. It is really an important distinction.

There are requirements within the section dealing with education and training for actual service at sea that cannot be substituted by college time or academic study. Skills will be graduated in managerial, operational and support levels, corresponding to those required of senior officers, junior officers and ratings respectively. A functional approach has been adopted to competency in both the deck and the engine departments, with special provisions for skills in such areas as cargo handling and stowage, navigation and care of persons on board.

This approach lends itself to a new systems of certificate structures in which more flexibility is permitted, so that a seafarer is not categorised as an engineer or deck officer, but can, after the proper training, qualify in other departments. Thus the engineer might be qualified to take a deck watch or undertake cargo handling duties, the deck officer to assist in the engine room. Ratings can gain skills that will enable them to serve in other roles, with career opportunities improving.

There are also other important provisions in the convention, especially that of hours of rest for seafarers, with a mandatory minimum rest of ten hours per day, which can be divided into two periods, one of which must be six hours. There must be no less than 70 hours of rest provided per week. This, it must be realised, has nothing to do with the overtime periods, but is solely arranged to prevent fatigue. On some hard pressed ships it will be an important change for the better.

Will the STCW Convention be improved by these changes and the seafaring world made safer? Time alone will tell, but the foundations have been laid for safer seafaring and a more skilled workforce, ultimately leading to the safer shipping and cleaner oceans.

5. The future

The improvement of standards and the way they are implemented is crucial to the success of IMO's efforts to improve maritime safety and prevent marine pollution from ships. It is especially important if human error, the major cause of accidents, is to be reduced. Yet, in the past the response to the accidents has usually been to look at ways of improving the hardware of shipping rather than considering the mistakes that caused the accidents and trying to prevent them from happening again.

In recent initiatives IMO has led the way in focusing attention on the crucial issues of improved standards for shipping management and for qualifications of shipboard personnel. The action taken by the Organisation will, in the years to come, help to ensure that these standards are further improved. The extent of that improvement will, however, depend very much on how they are implemented. Despite the fact that so much attention is being paid to this respect by IMO, the full backing of governments and the industry is significant.

There can be no doubt that the measures adopted and still being developed by IMO are needed. The growth of international crews, the steady decrease in the size of the crews, the decline of traditional flags and the rise of new ones, and the steady ageing of the world fleet have all been developments of the last two decades, but they are likely to continue well into the foreseeable future.

4.3 Financial Contribution of Trained Seafarers

It is often said that upto 80% of accidents at sea are caused by human error. Most of the accidents are the result of mistakes made by people either onboard ship or at ashore, which could and should have been prevented. These casualties result in the heavy loss of life and property and pollute the marine environment, which in turn requires heavy amounts of money for the clean-up of the seas.

The trained seafarers are to play a vital role in safe navigation and prevention of pollution from ships for which significant efforts have been made by IMO for improving the standards of training, certification and watchkeeping of seafarers to ensure the safer shipping and cleaner oceans. At the same time the right decisions must be made both on the ship and in the management to make sure that the company may be an asset to the nation by achieving economic benefits of earning foreign exchange and contributing to the balance of payments. Such companies can

save the freight bills otherwise paid to the foreign shipping companies for international trade, can enhance international trade, diversify the employment.

The trained human resource in shipping plays an important role in the financial contribution of shipping to the nation's economy. This may be a direct or indirect financial contribution.

1. Direct financial contribution

As is mentioned before, shipping is a large source of employment for well trained and qualified seafarers, who are competent to navigate and man the ships. According to the statistics issued by ISL Bremen at the beginning of the year 1994, the world merchant fleet of ships of 300 grt and over comprised of 35,159 ships. At the average rate of 13 personnel per ship , the total number of seafarers world wide stands 457,067 personnel plus the personnel working ashore. The sea service is highly paid, so the persons working in this profession earn very good wages that contribute to the accummulation of foreign exchange, which becomes the a source of sea way bill payment for the nation.

Some countries supply their seamen to the international market and this has become a significant source of foreign exchange remittances for them. The following countries are at the forefront in providing their manpower to the international shipping industry according to the International Shipping Federation's study conducted in 1990.

1. The Philippines	22 percent
2. Europe	16 percent
3. China	14 percent
4. Russia	13 percent
5. India	7 percent
6. South America	7 percent

Out of these countries, the Philippines is one of the leading country to provide manpower to the international shipping market. According to the Philippines Overseas Employment Administration (POEA), in its annual report in 1984, there were approximately 54,016 Filipino seafarers sailing the sea all over the world as crew members of ocean-going vessels of various countries. Remittances of these seafarers amounted to approximately US 202.39 million dollars. In 1992 the total number of deployed seafarers increased sharply, reaching the figure of 125,759 representing an increase of 133 percent within the time span of eight years. Since then the ship manning industry has constantly been a industry officially contributing a cumulative sum of US 1.8 billion dollars since 1975.

The statistics are significant since the seafaring industry is essentially a non-capital intensive business compared to traditional exports. Being a developing country it has an ample supply of manpower which is a potential contributor to the growth of the nation's economy particularly to the balance of payments and GNP.

2. Indirect Financial Contribution

Besides the direct financial contribution, there is indirect financial contribution of trained seamen towards the nation's economy.

If Pakistan has its own maritime experts then Pakistan does not need any experts from outside. Otherwise, Pakistan would have to pay foreign experts. And it is said that 40% of the aid for outside experts goes back to the donor agency, some times more than that in the form of consultancy fees.

The trained personnel working on board the ship would be able to maintain safety of life and property and save the amount that has to be paid by the owner in case of any

damage of life and property and the damage to marine environment which may some times beome more than the actual value of the ship itself e.g. in the case of liability for marine pollution in the USA waters according to OPA 90.

Sea employment is a highly paid service which enhances the social status of the seafarer and makes him able to manage a good education for his children and a respectable livelihood for his family and other dependants.

After sea service, these trained personnel may work efficiently ashore and enhance the maritime trade and other shipping activities, such as businesses involving brokerage, insurance, maritime law, and maritime consultancy. As in the case of, the UK in London, these activities involve 35,000 personnel in this single city. It has been a continual adage that insurers would on many occasions prefer to give cover on a fifteen year old vessel well managed than a modern vessel with poor management and manning arrangements. The high rate of premium on insurance may be saved if the vessel is being manned by well trained personnel on board.

Cargo owners are also always attracted to well manned vessels due to their interest in their cargo. It also helps the management to keep the bare minimum of shore employees as it is easier to handle well maintained ships with highly skilled labour.

To have well trained personnel onboard a vessel, is the requirement of the transfer of technology because the recipients of such technology must be well versed with the know-how and updating of the new advancements in the technology.

In the author's view the benefits that trained marine personnel can contribute towards a nation's economy are summerised as follows:

First, there are the tangible and partly quantifiable benefits of the earnings of these skilled personnel being repatriated to the country. Without this corps of trained nationals, the wages bill for the nation's seaborne trade would go elsewhere, adding to the nation's balance of payments difficulties.

Second, the existence of this group of trained personnel means that, on leaving the sea service after an average time of perhaps ten years, there is a body of expertise within the nation, which will be likely to build up ancillary service industries within the country, or elsewhere in which case again a proportion of these earnings will probably be repatriated.

Third, The existence of this group of ex-seafarers provides a body of educated personnel trained to a disciplined way of life, which is otherwise available mostly only through military careers. These people will therefore broaden the culture base of their society. The author would suggest that they are likely to provide distinguished service to their communities in a wide variety of professions adopted after leaving the sea.

4.4 Contribution of Pakistani Seafarers in the Nation's Economy

4.4.1 Maritime labour

Pakistani seafarers have served at sea with both foreign and national lines for many years and the tradition of maritime employment developed in a similar pattern, and for similar reasons, to that in India and Bangladesh. With the gradual decline in the number of Pakistanis employed on foreign flags, particularly British ships since 1960s, the number of jobs has contracted and for many years unemployment among seafarers has been a severe problem.

Traditionally Pakistan mainly supplied ratings to the foreign employers, but recently there has been a growing demand for officers on account of their training and certification standards based on the British model and IMO requirements, as well as their familiarity with the English language and their experience in service with foreign employers.

However, as the Pakistan National Shipping Corporation and the Pan Islamic Steamship Company have been responsible for most of the training, and the number of officers is not large as compared with India and the Philippines, any major increase in demand without a significantly increased commitment of cadet training to meet manpower needs in the longer term inevitably create severe difficulties for the domestic shipping industry.

4.4.2 Skill levels/experience

Pakistani ratings have a long history of expertise in traditional maritime skills and their employment on relatively modern domestic and foreign ships has given them experience of current expectations with regard to reduced manning. But as with most seafarers from the region, training will need to be given before they reach their full potential for service on the more sophisticated ships.

With junior officers, training standards are good and they have an aptitude for mechanical skills as well as nautical drive and energy. However, it is necessary to devote time and effort to encouraging confidence and hands-on-leadership skills particularly when serving with foreign senior officers.

Officers are still taught in English and take their examinations in that language. Ratings are familiar with the English language for normal operational orders. Both

officers and ratings have experience of service on foreign ships and mix well with other nationalities and are competent and always devoted to their jobs.

4.4.3 Recruitment of seafarers

The employment of seafarers is regulated by the government under the Merchant Shipping Acts enacted from time to time. Under this legislation all ratings are required to be registered with the Shipping Master at the Government Shipping Office, Karachi, and no rating should join a national or foreign flag ship unless his employment has been sanctioned by the Shipping Master.

At present, twenty one recruiting agents are licensed by the Director General Ports and Shipping to supply seafarers to foreign employers and these licences are issued annually. There are penalties for seeking to supply seafarers without the necessary licence.

Initial recruitment and training of seafarers is undertaken by the government, after which the seafarers are registered and issued with the necessary seamen's papers. Thereafter the seafarers are offered for employment in rotation in response to requisitions placed by licensed agents. Alternatively, the agents may be allowed to maintain their own company rosters which will allow both the companies and ratings to maintain continuity of employment between voyages. However, despite whether ratings are engaged on company rosters or the general roster, the selection procedures and pre-engagement medicals are conducted through the shipping office.

Officers are not required to register in the same manner as ratings, and most are employed on permanent contracts with the Pakistani lines and wages and agreements are fixed at company levels. A limited numbers are available for employment by

foreign employers through local agents, but inevitably most officers who may apply for such employment will be already employed by one of the local lines.

4.4.4 The wages of officers and ratings

The wage scales for Pakistani officers and ratings according to NIS are given in table number 30and 31. where the master gets US 2,610 dollars per month and chief engineer Us 2,570 dollars per month. Where as for ratings the radio officer, chief steward and electrician get US 1,380 dollars per month and chief cook US 860 dollars.

TABLE 30. WAGE SCALES

30.1 NIS WAGE SCALES FOR PAKISTANI OFFICERS AND RATINGS.

US Dollars/Month

CATEGORY	BASIC	PROVIDENT FUND	OVERTIME	LEAVE PAY	TOTAL
1. MASTER	1,518	76	834	182	2,610
2. CHIEF ENGINEER	1,494	74	822	180	2,570
3.CHIEFOFFICER AND 2ND ENGINEER	1,155	58	658	139	2,010
4.2N OFFICER AND 3RD ENGINEER	920	46	524	111	1,601
5.2ND OFFICER AND 3RD ENGINEER (Second Class)	840	42	478	100	1,460
6.3RD OFFICER AND 4TH ENGINEER	644	32	386	77	1,121
7. OFFICER CADET	195	10	111	24	

Source:- ISL Guide to International Maritime Labour Supply,1990.

TABLE 30.2 NIS WAGE SCALES FOR PAKISTANI RATINGS

US Dollars

CATEGORY	BASIC PAY	OVERTIME	LEAVE PAY	TOTAL PAY
1. Radio officer/ Chief Steward/ Electrician	740	455	185	1,380
2. Chief Cook	450	300	110	800
3. Boson/ Fitter/ Pump man/ Carpenter.	400	250	100	750
4. AB/ Motor man/oilier/ 2nd Cook	350	220	88	658
5. OS/ Wiper/ Mess man	300	185	75	560
6. Boy	160	88	32	280

Source:- ISL Guide to International Maritime Labour Supply, 1990.

4.4.5 Availability of seafarers

There are currently, according to the Shipping Office, Ports and Shipping Wing, 10,000 ratings registered with the shipping offices of which about 2000 are employed by Pakistan flag companies and some 5000 by foreign lines. The number of officers, who are not required to register in the same way as ratings, is not known with certainty, although about 1300 are employed by Pakistani shipping companies and probably between three to five hundred by foreign companies. The average remittance of seafarers, working on foreign vessels, to the country is approximately US 60 million dollars per annum which becomes 3.48% of GNP. This direct financial contribution of the seafarers to the country's economy has a significant importance because this helps the country in the balance of payments.

CHAPTER 5

IMPLICATION OF MARITIME TRAINING IN PAKISTAN.

5.1 Training Needs of Seafarers

There is precious little harmonious thinking within the shipping industry on the future of seafarers' training. Not only was that much controversy over which direction the review of the seafarers' Training, Certification and Watchkeeping (STCW) Convention of 1978 should take to meet the changing economic requirements of the shipping industry before June 1995, but there is also widespread disagreement over whether shipowners, governments or seafarers' unions should finance the extensive training necessary to reverse the global shortage of qualified ship officers in particular. This is not surprising, considering that it is estimated to cost up to $50,000 for schooling to educate and train a ship's officer.

The problem of maritime training financing is a symptom of the shipping's capital crisis. Various factors have contributed to this crisis, not the least the rising operational costs and the increasing size of insurance claims.

The Second Global Analysis of Ship Ownership and Ship Management 1991, conducted for Lloyd's Ship Manager(LSM) by marine consultant Stephen Chapman, shows that crew costs, reflecting crew shortage, have increased by 10-12% under open ship registers and by 7-8% under national flags. The biggest jump has been in insurance premiums where increases in P & I costs have averaged up to 30%. A number of operators reported costs doubling. The lack of profitability in the industry has led to lower cost solutions with respect to manning and training.

As to the confusion over future training standards, this is compounded by the recruitment crisis in shipping. Operators are under tremendous pressures to find adequate numbers of personnel and tend to be pre-occupied with fulfilling the minimum requirements concerning certification.

According to Julian Parker, the secretary of the London based Nautical Institute, "Owners and managers have accepted paper qualifications rather than made the efforts to establish their own performance standards." He also criticised "the deplorable practice of issuing secondary certificates of competency, without verifying standards, as practised by flags of convenience."

A survey of the Nautical Institute's 6,000 strong international membership, a majority of them sea going, revealed a strong sense of frustration over the lack of training in traditional skills like seamanship, navigation, safety capability and firefighting, and general respect of the sea.

A number of respondents to the 1991 Global Analysis commented on the problem of a lack of skills, and a lack of qualified personnel, rather than a lack of seagoing manpower. Nearly 50% of operators covered by the analysis reported that they had undertaken new training initiatives in the last year, while 18% are planning a switch to dual purpose crew training.

Problems of recruitment and lack of adequate training standards is a viscous circle. In order to solve the current imbalance in the supply of suitable manpower, there must be systematic investment in training. But unless seafaring, which as a result of technical advances has become an increasingly solitary profession, can be made to look more attractive as a career, there are likely to continue to be shortcomings in both the gross number of seafarers and the skill levels of recruits.

All is not gloom and doom, however. Some very valuable research has been conducted to find new ways in which the world-wide pool of skilled maritime labour might be replenished, and rejuvenated in the longer term.

In addition to focusing on technical skills, training of the seafarer of the future may well increasingly have to include a socio-psychological dimension, says Martyn Dyre Smith, a psychologist and former navigating officer with the UK merchant navy who is currently a principal lecturer in organisational behaviour at the New Castle Business School, UK. He is particular critical of the "social poverty" confronting the modern seafarer, saying that recruitment will have to pay more attention to personality and emotional stamina.

5.2 Tomorrow's Training Requirements

Training must be seen very much indeed as one of the most important long term strategies within the manning of ships, and is therefore probably not meant to be an exclusive issue for ship managers but equally for ship owners alike.

Quite surprisingly we often come across an attitude within shipping circles towards crewing and training as if it is the most irrelevant requirement in our industry, while at the same time every national administration and regional and international organisations relating to maritime transport recognise that it is the most important and most fundamental matter that a ship manager has to deal with today. Ships which are not professionally manned and offices which are not professionally staffed have no chance of operating successfully, reliably, or cost-effectively. The manpower of a company onboard and ashore is no doubt the most crucial subject that a company has to deal with, and training appears to be the only way of securing that there is adequate manpower available in the years to come.

It is stressed that the shortage of trained seafarers will be serious if nothing is done about it, and whether we are 400,000, 200,000 or 100,000 seamen short makes really no significant difference, because the impact of any shortage will be extremely dramatic.

It is therefore clear that the principal question of whether or not training is required must essentially be answered positively. How far the commitment of each shipping company or owner or manager actually goes, is difficult to establish. If every one actually performed as much training as claimed around the world then any further elaboration concerning this subject would render itself unnecessary. During many conferences, among which one of the best attended was probably Maritime Cyprus 1991, the most used word was "training". If the verbal commitment expressed actively reflected the situation, we could all lean back and there would be no need for any worries about qualifications, experience, standard of certification and availability of professionals in the future. It is, however, unfortunate that such a significant gap between reality and wishful thinking does exist and this makes training as relevant as ever.

5.3 A Need for Reappraisal

It was the preoccupation with knowledge requirements for certificates of competency that in years past bedevilled attempts to achieve global standards. The current focus on the need for skills assessment offers a much more meaningful basis for tighter international standards, because such assessment is a function of shipboard operations. Universally adopted practices relating to the radar skills is one example of the steps already taken in this direction.

The traditional certificates of competency systems are generally based on the principle that the candidates' fundamental knowledge is tested by examination, and that the

applications of this knowledge can then be learnt by junior officers, under the guidance of more senior colleagues, during the mandatory periods of sea service. Although this arrangement worked well for many years, it has recently come under increasing strain. In these times of reduced manning and rapid crew turnover, not to mention communication difficulties, the traditional system can hardly be expected to remain effective. The problem is compounded by rapid advances in technology, which has highlighted the need for formal hands-on training on new equipment. This, in turn, has led to the hurried introduction of short courses, with both training and assessment delegated to the training institutions.

The review of the 1978 STCW Convention has generated some healthy debate, with increasing emphasis being placed on the need for identification, training and assessment of essential skills, rather than on the knowledge element, supplemented by learning on the job. Given the present day crewing arrangements, and the increasing concerns about the human element in shipping casualties, responsible shipowners and national maritime administrations are recognising the need to ascertain that the candidates for certificates of competency are actually competent in the performance of the relevant duties before the certificate is granted.

5.4 Education and Training

Although notable initiatives such as the introduction of dual "trained "officers have been generated by maritime education establishments, the identification of shipboard tasks and duties is a matter primarily for the industry and maritime administrations to determine. The maritime educators' input to their deliberations should focus on the means of best achieving these objectives. In this they carry a heavy responsibility, particularly for the "education" component, as this involves the need of the individuals as well as those of the industry and maritime administrations.

It is the education component that represents the lengthy- and therefore costly-element in the overall programme; in many cases the shipping industry is expected to bear the cost. The pattern contrasts with that for most other industries, which are not burdened with educational responsibilities. Nevertheless, a sound knowledge of fundamentals provides the best preparation for coping with future changes in technology, and so it is vital that maritime administrations and the shipping industry are satisfied with the level and the quality of the education component. Accordingly, maritime educators should urge the maritime administrations to continue to prescribe the knowledge requirements in the revised convention, but in broad terms supplemented by reference to guidelines or core course curricula thereby facilitating incorporation education system within the various national systems.

On the other hand the training component, which is directly related to the shipboard functions and skills, could be much more tightly prescribed at an international level. Although shipboard regimes and functions will continue to vary, it should be possible for the revised convention to cover a variety of shipboard organisational arrangements. For example, the functional approach to this might subdivide the general bridge watchkeeping function into components such as navigation, instrumentation, and communications, with skill competency levels prescribed for each.

5.5 RECRUITMENT AND TRAINING POLICY OF PAKISTANI SEAFARERS

5.5.1 Background

The international maritime community is concerned with the ship manning problems of the world fleet and the role that the developing countries like Pakistan, can play in this field. To assess the situation, international and local maritime organisations

carried out valuable and extensive research to appraise world demand and the supply position of competent seafarers, and to identify any related problems. Some of the notable works are:

1. Report on "World wide demand for supply of seafarers", prepared by Institute of Employment Research of University of Warwich, jointly sponsored by BIMCO and ISF, 1990
2. Report on the "Indian Manpower Project" commonly referred as Mulji report, sponsored by ISF, July 1992.

The reports mentioned above carried out detailed market surveys and estimated the demand and supply position in different regions under various flags. The reports recommended taking steps to protect the interest of seafarers from developing countries, who have been traditionally manning the world fleet. The main findings of the reports were:

1. By 1990 the world wide supply of seafarers was 400,000 officers and 840,000 crew members whilst the world wide demand for both categories was 450,000 and 600,000 respectively. This situation created a shortage of 50,000 officers and surplus of 240,000 crew members to man the world tonnage.

2. Towards the year 2000, changing demands for competency on board and normal wastage of available supply of trained seafarers is likely to result in a decrease in the manpower supply to 140,000 officers and 300,000 crew members. While the demand of the personnel for the world merchant marine is projected to increase to 540,000 officers and 650,000 ratings. The shortage as a gap in demand and supply is likely to be 400,000 officers and 350,000 ratings.

At the national level, the position of Pakistan in this field is critical in the international context. The demand for Pakistani seafarers on foreign flags, which was already underrated, is further decreasing. Relevant circles in the country are greatly concerned with a situation that warrants immediate corrective measures.

5.5.2 The world market

Taking 25 as average number of persons employed at one time on board ship and taking into account leave requirements and needed support services ashore, the per year demand for competent marine manpower is estimated as:
35,160 x 25 x1.4 =1,230,600, or approximately 1.2 million.

Out of the total employment opportunity calculated above, 50 to 60 percent of the positions are reserved for nationals of the flag due to restrictions imposed by administrations. The stipulations described above leave 400,000 to 500,000 jobs to other nationals, mainly from developing countries where the income level is low.

Average monthly earnings of seafarers for full year employment have wide gaps among maritime nations of the world. The amount of average monthly payment for officers, in 1990, was reported to be as low as US $ 497 in Brazil to as high as US $ 12,439 in the USA. While the flag wise difference in average monthly earnings of sailors in ratings positions is considerably less and, in the same year, was quoted as US$ 97 in Brazil and US$ 4,500 in Japan.

Considering inflation and other relevant factors, the present average monthly earnings of seafarers of the world is estimated as US$ 1,500 per month.

The calculation shows that the size of world market for seafarers by earnings is:
1,250,000 x 1,500 x 12 = US$ 22,500, 000,000 say, twenty two and half billion US dollars per year.

5.5.3 Recruitment policy

The present seafarer recruitment policy of the Government of Pakistan is essentially strict and has the following salient features:

1. Pakistan Nationals are discouraged to seek employment on board foreign flag vessels if they are not holding a CDC issued by the government. They are not allowed to serve on vessels if they do not sign articles of agreement at a Government Shipping Office.
2. New entries in the shipping field and issuance of a CDC to them are highly regulated by the Government.
3. Pakistani nationals seeking employment on foreign flags are not allowed to freely travel abroad.
4. Training and education for a sea career is not accessible easily.

5.6 Maritime Training in Pakistan

Pakistan is a maritime nation with an 800 km long sea frontier. About 95% of its trade is carried by sea. Its merchant fleet's performance has to play a vital role in the nation's system of commerce, helping to carry national cargo to and from foreign markets. Ferrying raw materials alone, if disrupted can cause a national catastrophe. In emergencies, the merchant fleet's role is of such a national importance that sea lanes have virtually become the nation's lifeline, without which not only the wheels of production would stop but also would create a crisis of the essential commodities of edible oil and medicine for which the nation is still dependent. Ships do not operate in vacuum. They depend on a shore based infrastructure where the most important aspect is a well trained and competent human element.

Pakistan has its merchant fleet for which well trained and skilled personnel are required and it also can supply manpower to the international maritime industry. In

this connection Pakistan, being a member of IMO and a signatory to STCW, has the obligation to produce well trained and competent seafarers to navigate ships safely and in a manner that can protect the marine environment.

The following institutions in Pakistan are responsible for undertaking the maritime education and training for pre-sea and post-sea trainees.

1. Pakistan Marine Academy
2. Seamen's Training Centre
3. KPT Training Centre
4. PNSC Marine College

5.6.1 Pakistan Marine Academy

The growth of a viable national shipping industry purely depends on the availability of highly skilled and qualified manpower which is only possible when all the national, human and material resources of the country are pooled to together.

To meet the above requirement, a Mercantile Marine Academy was set up at Juldia Chitagong, East Pakistan in 1962. On the creation of Bangladesh, it was restablished temporarily in Haji Camp at Karachi in November 1971, and named the Pakistan Marine Academy. The Academy was finally shifted in its existing premises to Mauripur Road Karachi in June 1978.

The purpose built campus has an area of 136 acres in the north west of Karachi Harbour. It comprises an Administration/instructional Block, Officers Club, Cadets' Residential Block, Workshop, Simulators, Jetty, Swimming Tank, Play Grounds, Medical Centre, Mosque, Bank, Post Office, Seamen's Training Centre and a residential colony for both officers and staff of the Academy.

The Academy is intended to meet the training requirements of IMO. Keeping this very aim the training aids and other facilities are being upgraded constantly to keep pace with the rapidly changing technology in the maritime sector.

The Pakistan Marine Academy is an affiliated institution of the University of Karachi for the award of B.Sc. Degrees in Maritime Studies to its graduates. It is also recognised as a branch of the World Maritime University Malmo Sweden for the conduct of IMO specialised short courses and seminars.

5.6.2 Training facilities

Modern and scientific techniques are being adopted to train the young seafarers to compete with a fast growing world of automation and computerization. Audio Visual aids, video films, a library stocked with nearly 10,000 text/reference books, well equipped laboratories and workshops, models of machinery and other equipment fitted onboard vessels are available for imparting effective training. A language laboratory with the latest facilities helps trainees, especially the foreign students in improving their command over the English language, which is so important to assimilate to comprehend the academic and professional subjects. A most modern computer laboratory has recently been set up both with a view to familiarise the cadets with computer technology and the learning of Nautical and Engineering subjects.

5.6.3 Training

Pakistan Marine Academy is mainly responsible for the education and training of cadets. The cadets are inducted on merit basis after passing their intermediate examination in the engineering stream in at least 2nd class. The expenditure of the training is borne by the trainees which amounts approximately Rs. 60,000, only

limited scholarships are provided by the shipping companies and the UNDP. The duration of the training at the Academy stretches over a period of two years, divided into four terms allowing two months vacation during June and July and 15 days in December/January every year.

During this period, apart from extra curricular activities, academic and professional subjects are taught in and out of the class rooms in accordance with the syllabus approved by the University of Karachi, IMO and the Ministry of Communications of the Government of Pakistan. On passing out from the Academy, the cadets are awarded a B.Sc degree in Maritime Studies by the University of Karachi.

On the practical side, the Academy has the facilities to train Nautical cadets in seamanship, sailing, signalling, rowing, boat handling, and Engineering cadets in bench fitting, machinery welding, wood work, air-conditioning, water treatment, and running and operation of machinery. Study visits to various industries, ships and shipyards are arranged frequently for this purpose.

The Academy is also conducting post-sea refresher courses, to prepare officers for their certificates of competency examinations and short courses for seamen as required by STCW Convention of International Maritime Organisation.

5.6.4 Discipline

The Academy places the highest importance on discipline, morale and esprit.-de-corps. Discipline, as an essential ingredient of all organised activities, is the hallmark of a good sailor. Hence overriding importance is attached to this aspect and a high standard of discipline is maintained on the lines similar to that of the Defence Service Academies and such other institutions in Pakistan and abroad.

The Commandant reserves the right of taking any measure including relegation, withdrawal of the cadet from training or award any other punishments deemed necessary in the interest of maintaining and enforcing discipline, which is a traditional characteristic of the Academy.

5.6.5 Courses

The Academy, as a premier maritime training and education institution in the country, offers a comprehensive range of courses for personnel from the maritime industry. Since Pakistan has ratified the STCW, all COC courses are in line and in some cases exceed the standards, with care being taken to offer quality education ensuring a good international standing. As a branch of World Maritime University and its association with leading maritime training and educational institutions in and outside of Pakistan, the Academy is able to constantly upgrade its training programmes and offer new ones to meet industry demands.

The main areas of training and education presently undertaken by the Academy include:

(a) Pre-Sea,

(b) Post-Sea, and

(c) Modular approaches.

(a) PRE-SEA

1. DECK CADETS

selected candidates are provided with academic, vocational and professional training suitable for a successful career at sea. The cadet becomes conditioned both mentally and physically, to the ships environment in order to ensure an easier adjustment to the

life at sea. The training also emphasizes the development of the cadet's character, self discipline and sense of responsibility.

2. ENGINE CADETS

This course is designed to develop the knowledge and skills at levels to meet the international standards. It is to enable cadets to develop their leadership capabilities, character, discipline and sense of responsibility to match the stringent requirements of the modern marine engineer officer.

5.7 Advanced Maritime Training

In 1986 JICA (Japan International Cooperation Agency) provided advanced Maritime Training Equipment to the Pakistan Marine Academy which has enabled the Academy to conduct the post-sea courses. The following equipment has been received :

1. NAUTICAL

* Radar/ARPA Simulator
* Ship manoeuvring Simulator
* Celestial Navigation Equipment
* Models of Ships
* Loading Calculator
* Gyro and Magnetic Compass
* Cargo Handling Derricks

2. ENGINEERING

* Engine Plant Simulator
* Cut Away Models of Machinery and Pumps
* Workshop Machines
* Testing and Measuring Equipment Fluid Testing Analysers
* Models of Diesel Generators

In 1990 the IMO Team visited the Academy and gave it international recognition by declaring it a Branch of World Maritime University and authorised it to conduct specialised short courses and seminars under UNDP. It also undertook to upgrade its facilities by providing the latest equipment and teaching aids as to be at par with any similar international institute.

(b) POST-SEA

These courses are designed for seafarers with seagoing experience. They aim at providing training and education for the acquisition of sound knowledge, skills, and attitudes for the various grades of competency. The range of post-sea courses include:

1. NAUTICAL

Preparatory course for Class II, III, IV and Master Mariners

2. MARINE ENGINEERING

Preparatory courses for Class 1(A), (B), II (A); II (B), and Class III/IV.

(c) MODULAR

These intensive courses are of a specialised or specific nature. The duration vary from 4 days to 3 weeks and successful completion of a stipulated modular course is pre-requisite for the issuance of a Certificate of Competency by the Marine Administration. The courses presently offered are :

1. Proficiency in Survival Craft (Conducted at S.T.C).

A three week course which provides the candidates with essential knowledge and experience of survival principles, survival techniques and proficiency in the handling of the survival craft. All participants get Hands-on training of Life Rafts and Life boats.

2. Personal Survival Techniques course (Conducted at S.T.C).)

A four days course for seafarers, prepares candidates for basic survival at sea with hands-on training on life rafts and life boats.

3. Basic Fire Fighting at Sea (Conducted at S.T.C)

A one week course which provides the candidates with basic training in fire prevention and fire fighting on board ships. The course creates and promotes awareness in the importance of fire prevention and the dangers of fire on ships.

4. Approved Fire Fighting Course (Conducted at S.T.C.)

A one week course in advanced fire fighting and prevention on board ships. The course is designed for the officers and ratings.

5. Basic First Aid at Sea.(Conducted at S.T.C.)

A one week course which provides the candidates with the basics of first aid and sufficient practical training so as to be able to quickly and effectively deal with minor medical emergencies occurring at sea.

6. Ships Captain Medical Guide (Conducted at S.T.C.)

A one week course for the officers preparing them to handle medical emergencies on board ship.

7. Electronic Navigational Aids (Operation)

A three weeks course to provide the candidates with a fundamental knowledge and the skills needed to operate electronic navigational aids commonly fitted on merchant ships. Practical training, extensive inter-relationships and safe use of navigational methods are the key points of this course.

8. Radar Observer

A three weeks course which provides the candidates with fundamental knowledge and the skills needed to operate radar equipment and use the same for navigation and collision avoidance. The course is conducted on "live" radar equipment and provides extensive practical experience.

9. Radar Simulator

A one week course conducted on a very modern computer-aided radar simulator, which aims at providing the participants with proficiency in the use of, modern marine radars for navigation, manoeuvring and collision avoidance.

The course is recommended for experienced navigational watchkeepers and at present the entry is restricted to navigating officers who have completed an approved radar observer course as well as posses a qualifying watchkeeping service of twelve months. The course comprises extensive simulated exercises and passage involving different vessels having dissimilar manoeuvring characteristics. Post-exercise is the key point of this course.

10. Basic Personal Survival At Sea (Conducted at S.T.C.)

A one week course which provides the participants with basic working knowledge of life saving appliances and personal survival techniques with the objective of maximising survival chances during an accident at sea.

The course comprises extensive practical training in the handling of life rafts including launching and righting . It has been designed for the personnel in the maritime related field and can be adapted for the offshore sector with minor alterations.

11. Oil Tanker Familiarisation

A one week course aimed at providing the participants with a basic knowledge of oil tanker safety and pollution prevention.

It is mainly intended for junior officers and key ratings who have specific duties and responsibilities related to those duties, in connection with cargo and cargo equipment

on petroleum tankers, and required to undertake this course under the STCW Convention.

12. Oil Advanced Operations

A one week course aimed at providing the participants, who are likely to have immediate responsibility for cargo operations in a petroleum tanker, with a thorough understanding for safe and pollution free handling and transportation of bulk liquids and to enable them to supervise and train other personnel in operational procedures.

The course is mainly intended for Masters, Chief Engineers, Chief Officers, Second Engineers or any other person who is likely to have immediate responsibility for loading, discharging, care in transit or handling of bulk liquid petroleum and are required to undertake this course under the STCW Convention.

13. Inert Gas And Crude Oil Washing

A two day course aimed at providing the participants with a thorough understanding of safe and pollution free operational procedures for crude oil washing.

The course is mainly intended for Masters, Chief Engineers, Chief Officers, Second Engineers, or any other person likely to be placed in over all charge of crude oil washing on tankers and who is required to undertake these courses under the STCW Convention.

5.7 Seamen Training Centre

The Seamen Training Centre is one of the components of the Maritime Training Complex and is housed within the boundary walls of Pakistan Marine Academy. It is a separate administrative unit. STC is basically a training institute for ratings. However, presently it is working in close co-operation with PMA in conducting elementary refresher courses. Both of these institutions (PMA & S.T.C.) are federally administered and funded, working under the umbrella of Ministry of Communications (Ports & Shipping Wing).

5.8 PNSC Marine College

Pakistan National Shipping Corporation's Marine College is the unit of the Corporation and conduct the preparatory courses for the certificate of competency examinations. It has also started some life saving appliances courses related to the STCW 1978 Convention.

5.9 K.P.T. Staff College.

Karachi Port Trust Staff College arranges the courses of diversified nature according to the needs of the employees of the port of Karachi, especially marine engineers for the merchant navy. Apart from a very small number of administrative staff who are permanent employees, the entire faculty is composed of visiting professors/lecturers from local and foreign institutes. Professionals working in the field are also invited to participate in seminars.

Besides the above mentioned training institutions catering for the training needs of the maritime industry, there are three apprentice schools which also train some trade apprentices such as fitters, electricians, and carpenters. Under the Apprentice ship

Ordinance of 1962 and Apprentice ship Rules of 1966 of the Government of Pakistan, the main apprentice schools are:

1. Karachi Shipyard and Engineering Workshop's Apprentice School.
2. Karachi Port Trust Apprentice School
3. Pakistan National Shipping Corporation Workshop Apprentice School.

These major workshops under which these apprentice schools are functioning are recognised by the Maritime Administration of the Government of Pakistan. These workshops also give practical training to the successful engineering cadets.

5.10 National Institute of Oceanography

This institute is mainly concerned with survey and research related to sea-bed, marine life and pollution prevention and other related functions.

5.11 Future Plans

Advance in the modern technology makes it mandatory to update our knowledge and facilities. Progress is a never ending process and with time we hope not only to upgrade our equipment but also to introduce new courses to serve the merchant marine community. Besides efforts to award marine engineering degrees to the successful cadets of PMA, to set up a proper marine college which has already been approved by the government, to establish a full fledged computer centre, to commence GMDSS training and finally to bring PMA to the status of a Maritime University, Pakistan is making all efforts to achieve the practical sea training aspect which is vital to consolidate the cadets training.

5.12 Macro and Micro Objectives for Maritime Education and Training in Pakistan

5.12.1 Macro objectives

1. The status of the seafarer is to be brought in parallel with the shore based members of the society.
2. Attraction of the seafaring career shall be increased.
3. Maritime education and training institutions' needs for continuous and productive operation shall be realised by the authorities, and provision for the same are to be made in the long term planning.
4. Transfer of maritime technology and ocean sciences are to be made through and by strengthening the maritime education and training institutions.
5. A sufficient number of maritime personnel are to be made highly qualified and trained in specialised maritime fields so that enough well qualified maritime prsonnel are available to represent Pakistan at international conferences/ symposia/ seminars.
6. Environmental consciousness shall be developed among the people in general and among the seafaring personnel in particular. Fishermen will also benefit from such programmes.
7. The fact that separate engine room and deck divisions have not proved to be harmonious and efficient systems for management is noteworthy and all efforts are to be made to integrating these departments, since the present situation in shipping warrants optimum efficiency.

5.12.2. Micro objectives

1. An independent Maritime Education and Training Council shall be established on sound footing which will come into existence by a decree of national maritime law through an act of Parliament.

2. Review and updating of the MET structure, facilities and curriculum, to suit the hanged tecluiology and environment shall be made through the guidelines given by the Maritime Education and Training.

3. The scope of full utilisation of the maritime education and training institutions and their product shall be broadened.

4. Linking of the MET institutions with the national education system and affiliation with international maritime educational and training institutions shall be encouraged and effected.

CHAPTER 6

CONCLUSION AND RECOMMENDATIONS

6.1 Conclusion

Maritime transport is an international mode of transport and a primary factor in the regulation of world trade flow. It has direct and significant bearings on a country's economic growth. About 80% of the world trade is estimated to be transported by sea. In the national trade 90% of goods are estimated to be carried by sea, and the shipping cost forms an integral part of the prices of the traded goods.

For the developing countries, especially those that emerged from colonial or semi-colonial status since 1945, economic growth is actually connected with an increasing share in international trade since, in general, a large portion of their GNP is composed of exports. The prices of the major exports of these countries (mainly raw products) have been generally stagnant or declining. On the other hand, the prices of manufactured goods, which are the main exports of industrialised countries and major imports of developing countries, has been rising. The impact of rising price trends on the economies of the countries have been intensified by an increasing demand for imported capital goods and industrial input for agriculture and industrial development.

Participation in international shipping, for many developed and developing countries is an important aspect of development. As most of their trade is over long distances, involving such goods, the best part of which are not easily transported by any other means.

Confronted with declining terms of trade, the heavy impact of rising freight rates with the resultant deterioration in the balance of payments, developing countries in particular through the establishment of their merchant marine, could regulate the adverse impact on their balance of payments, on the flow of foreign exchange in payment for shipping services and other invisible transactions

Maritime transport is an integral component of production with indispensable bearings on a country's economic growth. The very survival of a nation depends fundamentally on the transportation of the goods she produces and the services received in exchange from other countries.

In fact, maritime transport is a very important mode of transport that carries the needs of the world to each and every corner of the globe, and demonstrate the need for maritime nations to establish and develop their merchant marines, consistent with efficient service, to facilitate their access to foreign markets and to enhance their success in the economic development of their countries. In this respect, the importance of a merchant marine is clear by the fact that it is a direct and indirect contributor to the nation's economy through earnings of international operations such as freight on imports, exports and cross trade, charter receipts, passenger revenues, contribution to the balance of payments, diversification of employment, promotion of national trade and contribution to GNP.

In the case of the UK, its merchant fleet, instead of declining since 1985, is continuously contributing towards the balance of payments and has provided a great number of job opportunities to both onboard and ashore personnel in the field. It has proved to be the source of sea trade expansion for the country up to the year 1994. The UK merchant fleet's contribution to the balance of payments has been constantly increasing since 1986. The total contribution in this regard for the year 1993

amounted £ 2.38 million. So, it is said that there would be £ 1.1 billion or more direct impact on the balance of payments if UK shipping were now to disappear altogether, although it is recognised that some of the sources would be deployed elsewhere in the economy.

Pakistan's economy is based on agriculture and major exports are agriculture products and manufactured goods such as leather and leather manufactures and rice. These products are exported to a large number of countries of different continents. The USA, Germany, and UK are the principal buyers followed by Japan, Saudi Arabia and France. The main imports are machinery, fertilizer, edible oil, and petroleum, which are bought from these countries. The main source of transportation of the goods exported and imported is shipping because more than 95% of the total foreign trade of Pakistan is carried by sea.

Pakistan's merchant fleet has been declining since 1980 and reached 28 vessels in 1993-94 as compared to 58 in 1979-80. But still, it is regarded a major source of diversification of national trade, employment and value added services such as ports, shipbuilding and ship repair, ship breaking, marine equipment industry, marine technology research base, shippers and other commercial services. Pakistan has the world's largest ship breaking industry which earned a total revenue of Rs. 1,067 billion in the year 1992-93.

Shipping, being a net export earner and a direct import saver and an efficient converter of foreign exchange, is very important for developing countries like Pakistan. The Pakistan merchant marine has been efficient since its inception but in recent years it has shown losses in shipping accounts due to the following reasons:

1. Withdrawal of Right of First Refusal
2. Failure of cotton crop
3. Drop in import of vehicles in CKD condition

4. Not possessing proper container vessels to meet the demand of containerisation trade.
5. International restriction on use of more than 17 years old ships in European ports and some other regions
6. Old ships becoming out dated and not suitable for present day cargo liner services.

These reasons resulted in the low share for the Pakistan merchant fleet in national seaborne trade which amounted 10% in 1992-93 and PNSC's share was 7.5 %. But instead of this loss it is still considered a major source of earning of foreign exchange which helps in the balance of payments and reduces the outflow of foreign exchange for imported shipping services. Although shipping has a small contribution of 5.08 % out of a total 10.2 % for transport, storage and communications to the GNP and GDP, for the country's balance of payments, it is still regarded as an essential economic component for Pakistan because it serves the trade of Pakistan by operating services to areas of major trades, maintains stabilising influence on the freight rates charged by the conferences and other liner services operating to Pakistan, earns and saves the foreign exchange on freight for the country, and provides strategic links in times of emergencies.

The trained human element in shipping plays a vital role in its contribution towards a nation's economy and in safer shipping and cleaner oceans. Every study of shipping casualties agrees that the majority of them are due to the human error. It is concluded that these human errors are made due to too heavy of a load being put up on the crew, especially in ports, and as a result of inadequate training.

Any attempt to reduce accidents at sea should concentrate on eliminating human error, since this is where the problem is greatest and where the biggest improvement could be made. This effort must be shared by everyone involved in shipping, including IMO.

The IMO has done a significant job in this connection by developing and adopting regulations to improve safety of international shipping and to prevent pollution from ships. It has adopted more than 40 conventions, protocols, and other treaties and several hundred codes and recommendations.

The major conventions adopted by the IMO in this respect are SOLAS 1974, COLREG 1972, MARPOL 1973/78 and STCW 1978. Two main works of IMO concerning the elimination or reduction of human error are the STCW and International Safety Management Code (ISM Code) where stress is given on the standards of training, certification and watchkeeping of seafarers working on board ship and as a good quality management system for personnel involved in administration and management of shipping companies.

Recognising the importance of training of shipping personnel, the IMO established the World Maritime University in Malmo, Sweden in 1983 to train the seafarers and make them competent to man the ships efficiently, save the life and property at sea and prevent the pollution from ships. The University provides intensive training for men and women who have taken up a career in shipping administration, company management, maritime education, port management and marine environment protection and are lacking in the modern training facilities in their own countries. The university enables this deficiency to be overcome and ensures the safety of life at sea and prevention of pollution from ships.

Trained human resources also play an important role in the financial contribution to the nation's economy. This may be a direct or indirect financial contribution.

The sea service is an attractive and highly paid service, so the persons working in this profession earn very good wages, particularly foreign exchange when working on foreign ships, which becomes the source of sea way bill payment for the nation. The

best example in this regard is of the Philippines who supply their seamen to the international shipping market and have become a significant source of foreign exchange remittances for the nation. In 1992 nearly 125,800 Filipino seamen were deployed on the foreign ships since then the ship manning industry has constantly been a industry contributing a commulative sum of US $ 1.8 billion per annum to the nation's economy, and particular benefit to the balance of payments and the GNP. The remittance of Pakistani seafarers, working on foreign ships, to the country is approximately is US $ 60 million per annum which becomes 3.48 % of GNP of the country.

Besides the direct financial contribution, the trained human resource may contribute indirectly to the nation's economy. First, the trained personnel working on board ships would be able to man the ships properly and save life and property and in doing so save the amount that has to be paid by the ship owner in case of damage to property, life and environment.

Second, the existence of trained personnel, on leaving the sea service, may form a body of expertise within the country which will be likely to build up an ancillary service industry within the nation. This saves the amount that has to be paid to the foreign expertise in case of nonavailability of local maritime expertise.

Third, the presence of this group of ex-seafarers provides a body of educated personnel trained to a disciplined way of life and will therefore broaden the cultural of base of their society.

Pakistan is a maritime nation and a member of the International Maritime Organisation. Recognising the importance of maritime education and training and the need of shipping companies for well trained and competent seafarers for manning their ships for safety and preventing pollution, the government of Pakistan has an

obligation to produce well trained and competent seafarers to meet responsibilities under the STCW Convention to which Pakistan is signatory. The Pakistan Maritime Training Complex, which includes the Pakistan Marine Academy, Seamen's Training Centre and Marine College, has been entrusted with the task of maritime education and training. Pre-sea, post-sea and modular training is being carried out effectively in these training institutions. Besides these, PNSC Marine College and K.P.T. Training Centre are also imparting training.

Pakistan's maritime training system is working on the UK model, and the certificates of competency are accepted all over the world. After meeting the requirements of national shipping companies, Pakistan supplies the manpower to the international shipping market. About 5000 ratings and 500 officers are working on foreign vessels. The average remittance of these seafarers is approximately US $ 60 million which helps the nation's balance of payments.

Pakistan Marine Academy, a branch of World Maritime University Malmo, Sweden, is the principal maritime education and training institution in the country which offers the vast variety of courses for personnel from the maritime industry in and outside the country. Since Pakistan has satisfied the STCW Convention, all courses, including competency, are in line with, and in some cases exceed the STCW standards. Care is taken to offer quality education that ensures good international standing. To meet the industry demands, the Academy is constantly upgrading its training programmes as well as offering new courses. The production of quality maritime training is an integral part of Pakistan's maritime policy.

6.2 RECOMMENDATIONS

In the light of the above conclusions and the views presented in the chapters of this dissertation for further improvement and updating of Pakistan's merchant fleet and

manpower development system, it becomes clear that it is necessary to keep abreast and be responsive to the ever-changing demands of maritime trade and industry. Effective attainment of these development needs calls for the full cooperation of all the agencies and institutions involved in the maritime development process to achieve development of maritime merchant fleet and the needed manpower therefore encompasses modernising the national merchant fleet, providing an effective and updated maritime education and training system, and properly administering the regulations for the country's seafarers.

In this connection the following development strategies are recommended:

1. To ensure the participation of private sector in shipping, the Government should de-regulate its shipping policy and make it flexible so that the private shipping companies to whom licences have already been issued, may enter into and compete for global business that contributes towards the nation's economy.

2. For economic viability and commercial profitability, it is necessary to analyse the costs (direct or indirect), scheduling, consolidation of cargoes and utilization of full capacity of vessels in their voyages. The national fleet should be modernised by replacing the old tonnage with modern and proper vessels especially container vessels, to meet the requirements of containerisation trade.

3. The passenger ships should be replaced by new ones and passenger service may be initiated to carry passengers to Jeddah, Saudi Arabia for performing Umra and Hajj. Besides this, it is also recommended that a regular ferry service be started between Pakistan and the Gulf States which could earn significant revenue for the country and promote tourism in Pakistan. In the case of Europe, the major share of their shipping earnings comes from passenger service, particularly, the UK and Scandinavian states.

4. After the break-up of the Soviet Union, several Muslim States of central Asia have emerged on the map of the world, where sixty million inhabitants provide good opportunities to promote and accelerate trade and economic cooperation. Pakistan has the potential to provide these landlocked countries their shortest possible sea route. Through this route these states may be able to promote trade links with South East Asian and Far East Asian countries. As the container services begin, large foreign container shipping companies may be benefited. Thus, this brings a new challenge for Pakistan shipping lines to come forward and play the necessary roles in establishing a sound Pakistani shipping fleet with proper container vessels to control this new trade. Port facilities may be provided at Gawadar by making it an efficient international sea port.

5. The approach to education and training in the maritime sector should not concentrate on producing officers and ratings only for serving on vessels or ashore within the industry. Managerial staff with professional qualification and experience, with or without seagoing experience may take up key positions in the head office structures of the operation of ports, in shipbuilding and repair, in government organisations, classification societies concerned with safety, inspection or survey of the ships, and in marine insurance and brokerage companies. So, the training opportunities should be oriented to support these careers which can add so much more shipping related revenue to a nation's economy.

6. Keeping in view the supply and demand of the competent seafarers, it is recommended that a new and liberal maritime labour policy be formulated, optimizing the utilization of available training facilities and allowing the creation of additional facilities to undertake the marketing measures that will promote maritime employment opportunities for Pakistani seafarers. In this connections following strategies are proposed:

6.1 Establish an overall authority that will oversee, coordinate and integrate the efforts of all the agencies in the maritime manpower development system. This is envisioned also to serve as an effective forum for consensus and inter-agency exchange of information and ideas that will lead to a streamlined and effective operation

6.2 Establish a research and development office within the maritime development system, to conduct research on current and upcoming developments and trends in maritime technology with particular emphasis on its impact on manpower development in maritime education, training, legislation and certification of seafarers.

6.3 Adopt a system that would be responsive to the manpower development needs that could expeditiously respond to the ever-changing requirements of the industry and other problems confronting the manpower development system. By having this system, issues and policies affecting manpower development can be evaluated and decided in a much shorter time, such as:

a. Training upgrading and retraining should be provided to all seafarers on board ships, as well as ashore, with emphasis on skills development.

b. Enhancing the capability and effectiveness of the maritime education and training system to keep up with the ever changing technological demands, by adopting the up-to-date technologies in knowledge transfer incorporating both methodical and practical forms. The simulator is one such effective tool for enhancing knowledge transfer in this connection.

7. Necessary adjustment in educational and training programmes is recommended that can accommodate the development of Dual Purpose Officers (DPO) and General Purpose Ratings (GPR).

8. Training facilities should be centralised and should be provided at the Pakistan Marine Academy to avoid the duplication of efforts and separate funding on the same purpose.

9. For more effective practical training, the Academy should be equipped with life boats and life rafts for the survival at sea and salvage operation course and a training ship for the training of ship manoeuvring, radar navigation and ship anchorage practice.

10. The Pakistan Marine Academy should be upgraded to the status of The Pakistan Maritime University, where degree courses in other maritime activities may be undertaken like, Insurance, Law, Electronics, Administration, Ports and Shipping Management, Shipbrokerage and Environment Protection. These facilities should be in addition to the facilities presently being provided for the training of seafarers for both officers and crew of the Merchant Navy. It is also recommended that the teaching staff be given the opportunity to visit well recognised maritime training institutions of the world such as the World Maritime University Malmö, Sweden, the Maritime Operational Centre Warsash, Southampton, England, and the Chalmer's Nautical School Gothenburg, Sweden. The exchange of such expertise should be arranged with these institutions to support the proposed curriculum development.

1.1 TOTAL MERCHANT FLEET

1.1.1 By major countries of domicile as of July 1st, 1994

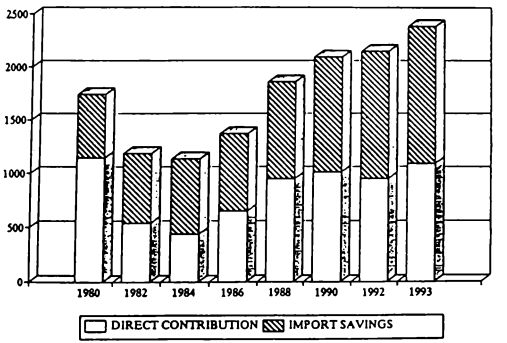
Ships of 1000 grt/gt and over

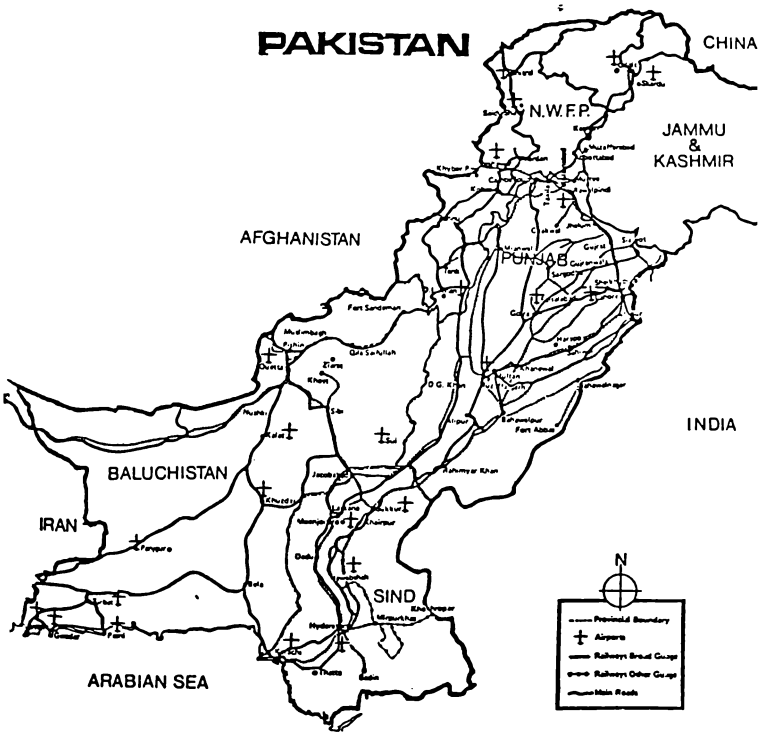
Country of domicile (a) / dwt-rank	National flags (b)				Foreign flags				Total fleet controlled				Foreign flag dwt-% share
	No	1000 dwt	1000 TEU	av. age (years)	No	1000 dwt	1000 TEU	av. age (years)	No	1000 dwt	1000 TEU	av. age (years)	
1 Greece	1023	52289	89	18.4	1825	62782	107	19.2	2848	115070	196	18.9	54.6
2 Japan	984	29140	90	9.3	1831	56277	248	10.0	2815	85416	338	9.8	65.9
3 US	366	14553	216	21.6	566	37423	30	15.1	932	51976	246	17.7	72.0
4 Norway	707	30986	89	13.6	448	17871	113	14.7	1155	48857	203	14.0	36.6
5 China, PR of	1324	20906	132	18.2	271	12011	56	13.2	1595	32917	189	17.4	36.5
6 Hong Kong	94	5243	30	11.8	522	24165	94	15.1	616	29408	124	14.6	82.2
7 UK	219	4567	80	15.1	397	16958	61	15.2	616	21525	141	15.2	78.8
8 Korea, Rep. of	380	9611	89	15.3	206	8924	68	9.9	586	18535	157	13.4	48.1
9 Russia	1578	13320	105	18.1	220	5056	50	12.1	1798	18376	155	17.3	27.5
10 Germany	473	5800	291	8.7	760	10656	251	12.3	1233	16457	542	10.9	64.8
11 Denmark	378	6518	161	10.0	189	5368	37	10.2	567	11886	197	10.0	45.2
12 Sweden	159	2009	21	15.4	128	9733	8	13.5	287	11742	29	14.5	82.9
13 Taiwan	167	6729	154	11.9	218	4884	101	15.1	385	11613	255	13.7	42.1
14 India	289	10003	26	13.2	51	1305	4	18.2	340	11308	30	14.0	11.5
15 Italy	480	8572	53	16.0	89	2594	3	16.5	569	11166	57	16.1	23.2
16 Brazil	212	8114	26	16.0	15	1543	-	14.1	227	9658	26	15.9	16.0
17 Singapore	300	6393	80	15.5	182	2884	16	19.0	482	9277	95	16.8	31.1
18 Turkey	357	7696	7	17.2	15	118	1	26.4	372	7814	8	17.5	1.5
19 Iran	121	7110	8	17.1	2	16	-	29.5	123	7126	8	17.3	0.2
20 France	132	3909	53	13.6	90	2992	28	17.5	222	6902	80	15.2	43.4
21 Saudi Arabia	52	903	11	21.2	45	5456	0	14.7	97	6359	11	18.2	85.8
22 Ukraine	450	5278	51	18.2	23	210	3	21.1	473	5488	54	18.3	3.8
23 Netherlands	336	2796	113	9.6	146	2001	22	13.6	482	4797	134	10.8	41.7
24 Romania	232	3711	13	15.4	15	897	1	13.6	247	4608	14	15.3	19.5
25 Philippines	282	4234	14	18.6	17	148	2	19.5	299	4382	16	18.6	3.4
26 Kuwait	36	3299	1	12.3	7	1008	-	13.8	43	4307	1	12.6	23.4
27 Switzerland	13	483	1	11.9	147	3491	51	19.0	160	3975	52	18.4	87.8
28 Indonesia	396	2510	16	17.9	90	1422	3	13.6	486	3931	19	17.1	36.2
29 Spain	145	1353	12	15.9	85	2498	5	17.4	230	3851	16	16.4	64.9
30 Belgium	7	15	-	16.2	117	3830	34	12.0	124	3846	34	12.3	99.6
Total 30 countries	11692	278054	2030	15.5	8717	304520	1395	14.4	20409	582574	3425	15.1	52.3
Others	2531	38222	243	18.1	924	20886	154	16.7	3455	59108	397	17.7	35.3
Subtotal	14223	316276	2273	16.0	9641	325406	1549	14.7	23864	641682	3822	15.5	50.7
Unknown (c)									2269	32533	212	18.5	...
World total									26133	674215	4035	15.7	
Country groups (e)													
OECD	6154	176096	1312	14.0	7009	239760	1023	14.5	13163	415856	2335	14.2	57.7
of which EU	3266	86586	855	14.1	3724	110042	547	16.3	6990	196628	1402	15.3	56.0
OR (d)	77	3243	9	18.8	34	502	4	25.1	111	3745	12	20.7	13.4
of which majors	53	2952	6	17.7	32	493	4	25.1	85	3445	10	20.5	14.3
Others	7992	136937	953	17.5	2598	85144	522	15.1	10590	222081	1475	16.9	38.3
Total (e)	14223	316276	2273	16.0	9641	325406	1549	14.7	23864	641682	3822	15.5	50.7

Note: For definitions compare explanatory notes.
(a) Attributable to parent companies indicating country of controlling interest.
(b) Including international registers, like NIS and DIS; including vessels registered at territorial dependencies.
(c) Figures include largely open registry flags where the country of the controlling interest is unknown.
(d) Open Registry comprises Liberia, Panama, Bahamas, Cyprus, Malta, Saint Vincent, Bermuda, Marshall Islands, Vanuatu and Antigua & Barbuda; of which majors comprises only Liberia, Panama, Bahamas, Bermuda and Cyprus.
(e) Excluding "unknown".

(Source: ISL Merchant fleet data bases; aggregates based on quarterly updates from Lloyd's Register of Shipping/LMIS)

FIGURE 11: DIRECT/INDIRECT CONTRIBUTION TO THE BALANCE OF PAYMENTS




PAKISTAN
CHINA
N.W.F.P.
JAMMU
&
KASHMIR
AFGHANISTAN
PUNJAB
INDIA
BALUCHISTAN
IRAN
SIND
ARABIAN SEA
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